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February 25, 1992

Meeting Minutes Transmittal/Approval
300-FF-5 Operable Unit Managers Meeting
450 Hills St., Room 47, Richland, WA
January 23, 1992

From/
Appvl.: Eric Goller Date: 2-27-92
Eric D. Goller, 300-FF-5 Unit Manager, RL (A5-19)

Appvl.: David R. Einan Date: 27 Feb 92
David R. Einan, 300-FF-5 Unit Manager, EPA (B5-01)

Appvl.: Charles S. Cline Date 2/27/92
Charles S. Cline, 300-FF-5 Unit Manager, WA Department of Ecology

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Meeting minutes are attached. Minutes are comprised of the following:

Attachment #1 - Meeting Summary/Summary of Commitments and Agreements
Attachment #2 - Meeting Agenda
Attachment #3 - Attendance List
Attachment #4 - Commitments/Agreements Status List
Attachment #5 - 300-FF-5 Work Progress
Attachment #6 - Baseline Schedule Status
Attachment #7 - Approved Document Change Control Forms
Attachment #8 - River Stage Fluctuations in the 300 Area (SWS-1)
Attachment #9 - 300-FF-5 Surface Geophysics Status
Attachment #10 - 300-FF-5 Surface Geophysics Supplement
Attachment #11 - Large Scale Tracer Simulations for the 316-5 Trench above the 300-FF-5 Operable Unit

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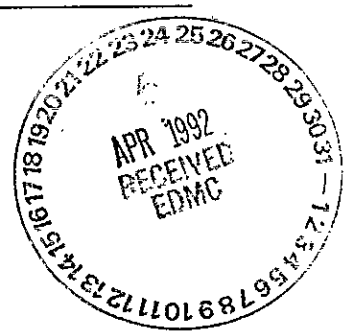
Prepared by: Suzanne Clarke Date: 2/27/92.
SWEC/GSSC

Concurrence by: LC Hulstrom Date: 2/27/92
WHC RI Coordinator



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Attachment #1

Meeting Summary

300-FF-5 Operable Unit Managers Meeting
January 23, 1992

Action Item Update

1. The current status of the outstanding action items was presented by Larry Hulstrom (WHC) (see attachment #4).

   Action Item #3FF5.14 was closed at this meeting.

   Action Item #3FF5.15 was closed at the last meeting.

Change Orders

2. The change form for well remediation was recently revised. Only this new revision is to be used for changes.

3. New change orders 300-FF-5-10 and 300-FF-5-11 have been issued. Copies are included in Attachment #7 at the end of these minutes.

300-FF-5 Operable Unit RI/FS Activities

4. Larry Hulstrom (WHC) presented the status of remedial investigation/ feasibility study (RI/FS) activities. Task No. 1, well drilling, has been completed on wells 5B and 5C. Both wells have been sampled. The problem of casing that had become stuck in wells has been solved and corrected. Ten inch casings will be installed for the purpose of pump testing wells 4-T and 7-T. *Slug* tests were run in wells 4-A and 7-A. Remediation work has been completed on three wells. Fitness for use testing is under way in 25 wells.

Action Item #3FF5.16: The summarized well construction data and the field observations of 300-FF-5 activities are to be transmitted to Ecology and EPA. Action: L. Hulstrom and E. Goller.

5. A progress report on geophysical surveys (Task No. 2-A) will be given at a later date. Data derived from recent drilling activities (Task 2-B, geological characterization) is being incorporated into the progress report.

6. The results of soil chemical analyses (Task No. 3) are expected to be received from the lab within *the coming months*. *Most of* the physical analyses have been received and will be entered into HEIS (Hanford Environmental Information System). Also, well logs will be input to computer files. A summary table will be completed for both physical and chemical data from all of the operable unit wells.

7. The *collection* of the first *round of* samples for groundwater investigations (Task No. 4) were completed on January 16, 1992. Samples were analyzed based on Level IV CLP (Contract Laboratory Program) criteria. There were 20 additional samples that were analyzed based on

Level III, SW-846 criteria *for the RCRA program*. Water levels and temperatures are being measured and recorded by transducers in several wells for Task 4C. The work plan for the study on aquifer intercommunication (Task 4D) has been completed and should be out of review in a week or two from this meeting. Modeling and simulation work (Task 4E) was covered at a meeting on October 31, 1991.

8. *A report authored by PNL (Chris Sherwood) that addresses river stage effects on groundwater in the 300 Area is* due out in three to four months. Task 5C is *to be coordinated with Task 5B,* spring sampling. The location and integrity of Station Two, *the surface water stage station,* needs to be evaluated (Task 5E). The feasibility of a second *300 Area river stage* monitoring station is being investigated.

9. Aquatic biota have been sampled for periphyton at four of twelve stations (Task No. 7). More time is needed for a presentation on biota. It will be given at the UMM meeting in February, 1992.

10. Studies for the LO-45 Project on river water characterization have been conducted along transects across the river. The draft report on the characterization study done *for* the LO-45 project is out (Task 5D). This will be compared to the work plan and DQOs (Data Quality Objectives).

11. Feasibility Study work has been scheduled to begin in mid-summer.

12. The SW-846 analytical methods are to be substituted for CLP methods, subject to approval by the regulators. Ecology representatives pointed out that regardless of the method of analysis employed, a statistically valid sampling plan is required by the regulators. Westinghouse representatives countered that DQOs are addressed in an evaluation that demonstrates *that SW-846 analysis methods* meet regulatory requirements. The SW-846 versus CLP issue needs to be concluded prior to collection of the next group of samples, if possible.

13. Electromagnetic induction (EMI), ground penetrating radar (GPR), and seismic techniques are being run on transects crossing the 300 Area. Joseph Kunk (WHC) reported that "cultural noise" in the 300 Area constitutes a problem for data acquisition near facilities (see Attachments #9 & #10). Maps showing the locations of the transects will be forwarded to the regulators under separate cover.

Action Item #3FF5.17: Copies of handouts on EMI, GPR, and seismic transect locations in the 300 Area are to be transmitted to Ecology and EPA. Action: J. Kunk and E. Goller.

14. Dave Duranceau (WHC) reported that a number of tracer simulations have been conducted with computer flow models. In a release scenario where the Columbia River level was initially higher than the water table and then dropped below the water table the tracer initially moved away from the river then reversed direction and flowed toward the river. These changes created an ebb and flow in the aquifer that resembled tidal activity. The tracer modeling team recognizes the existence of a paleochannel in the Hanford formation underlying the 300 Area. An attempt will be made to include this feature in some scenarios, relative

to the anisotropy in the model design. Attachment #11 includes details on release scenarios.

Attachment #2

UNIT MANAGER'S MEETING AGENDA
300-FF-5 OU
January 23, 1992
10:00 - 12:00
Room 47, 450 Hills

Introduction:

Status:

- Action Items
- Remedial Investigation
- Schedule

Issues:

Other Topics:

- Change Form 300-FF-5-12 regarding Well Remediation
- RCRA/CERCLA Integration of Groundwater Sampling in the 300 Area
- Status of Surface Geophysics Surveys
- Tracer Study Modeling

Agreements and Commitments

Presenter - Larry Hulstrom

Attachment #3

Attendance List
300-FF-5 Operable Unit Managers Meeting
January 23, 1992

Name	Organization	Role	Phone
Goller, Eric	DOE-RL	300-FF-5 OU Mgr	(509) 376-7326
Mauss, Billie	Ecology	CERCLA	(509) 546-2993
Hibbard, Rich	Ecology	CERCLA Unit	(206) 493-9367
Teel, Darci	Ecology	CERCLA	(509) 545-2312
Cline, Chuck	Ecology	Unit Manager	(206) 438-7556
Sprecher, Jon	B&C	Ecology Support	(503) 244-7005
Einan, Dave	EPA	Unit Manager	(509) 376-3883
Drost, Brian	USGS	EPA Support	(206) 593-6510
McClung, Bill	SWEC	GSSC/RL	(509) 376-1853
Fryer, Bill	SWEC	GSSC/RL	(509) 376-9830
Erickson, Kirth	SWEC	GSSC/RL	(509) 376-8189
Bartz, Joan K.	CNES	GSSC/RL	(509) 376-6324
Downey, Hal	WHC	Program Office	(509) 376-5539
Carlson, R.A.	WHC	Env. Eng. Manager	(509) 376-9027
Henckel, George C.	WHC	FF-1 RI Coord.	(509) 376-1994
Sonnichsen, Jack	WHC	M & O	(509) 376-9956
Duranceau, David	WHC	M & O	(509) 376-6701
Kline, Niall	WHC	M & O	(509) 376-8080
Frank, Michael	WHC	RI	(509) 376-2731
Lerch, Jeff	WHC	OSM	(509) 373-3419
Kunk, Joseph	WHC	Geophysics	(509) 376-4024
Simpson, K. Reed	WHC	Geology	(509) 376-1097
Washington, Theodore X	WHC	OSM	(509) 373-4369
Pool, Karl N.	WHC	OSM	(509) 373-3137
Hulstrom, Larry	WHC	FF-5 RI Coord.	(509) 376-4034
Bryce, Bob	PNL		(509) 376-8345

Attachment #4

Commitments/Agreements Status List

300-FF-5 Operable Unit

January 23, 1992

Item No.	Action	Status
3FF5.14	Ecology is to respond on the acceptability of using SW846 protocol instead of CLP protocol for analyzing samples from wells used for RCRA monitoring. The "fitness for use" of these wells will also be evaluated. Action: L. C. Hulstrom (10/17/91)	Closed The RCRA/CERCLA Integration Meeting was held on 12/18/91 to discuss the use of one groundwater sample to satisfy 300 Area program needs.

Attachment #5

300-FF-5 Work Progress page 1 of 5

January 23, 1992

0 Remedial Investigation Activities

Well Drilling

Well Specifications for Tasks 2, 3, and 4

The document, "Borehole Completion and Seals Testing for Upper Confined Aquifer-Monitoring Wells in the 300-FF-5 Operable Unit", EMO-1029, was distributed on April 10, 1991.

Groundwater Monitoring Wells

WELL STATUS AS OF 1/23/92

Well #	Start Date	Present Depth	Completion Date	Status
7A	5/2/91	55' TD	6/8/91	Completed and sampled.
8A	5/2/91	58' TD	5/15/91	Completed and sampled.
7C	5/24/91	202'TD	9/25/91	Completed and sampled.
4C	6/3/91	181'TD	9/18/91	Completed and sampled.
1C	6/13/91	178'TD	9/26/91	Completed and sampled.
7B	7/15/91	179'TD	9/19/91	Completed and sampled.
4B	7/15/91	150'TD	9/26/91	Completed and sampled.
1B	8/08/91	110'TD	9/21/91	Completed and sampled.
3A	8/14/91	46' TD	9/17/91	Completed and sampled.
6A	9/18/91	54' TD	9/28/91	Completed and sampled.
5C	6/20/91	207'TD	12/31/91	**Completed and sampled.**
5B	8/01/91	167'TD	1/2/92	**Completed and sampled.**
1-13B	8/27/91	119'TD	11/18/91	Completed and sampled.
1-14B	8/27/91	112'TD	11/19/91	Completed and sampled.
1-10B	9/06/91	116'TD	11/20/91	Completed and sampled.
6B	10/17/91	115'TD	11/22/91	Completed and sampled.
Sonic Drilling				
1A	9/04/91	51'TD	9/10/91	Completed and sampled.
4A	9/09/91	45'TD	9/23/91	Completed and sampled.
5A	9/26/91	72'TD	10/9/91	Completed and sampled.

TD= total (final) depth

Geologic Characterization Wells

A letter of instruction for borehole GC-1 is in preparation to send to KEH for initiation of drilling activities with a request that drilling be completed by no later than April 30, 1992. Depth of the borehole will be 165 ft.

0 Remedial Investigation Activities (continued)

Pumping Wells

Some additional testing in wells 4A and 7A was performed to finalize the diameter requirements for the construction of pump test wells 4T and 7T. Direction will be provided to KEH to construct the wells as 10 inch diameter completions. The draft test plan is being finalized to include this recent information. The target for completion of the pump tests is still approximately March 30, 1992. Depths of these two boreholes will be 55 ft and 85 ft respectively.

Existing Well Maintenance

Well remediation work has been completed on 3 wells (1-1, 2-1, 6-1) and is ongoing on 4 others (4-1, 4-7, 3-9, 4-9). One other is presently scheduled to begin soon (3-12). Change Form 300-FF-5-12 has been prepared to address some of the field conditions that were encountered during remediation.

Since the schedule for remediation work was advanced some of the fitness for use determination surveys are presently behind schedule. In addition, other higher priority work such as the Carbon Tet. ERA have utilized available staff. Arrangements are being made to restart the fitness for use work within the next several weeks.

Task 1--Source Investigation

(Conducted in Source Operable Units)

Task 2--Geologic Investigation

Task 2a - Geophysical Surveys

Work is continuing to reduce data gathered to date. Direction was provided to the geophysics team to concentrate efforts on acquisition and reduction of data for the suspected paleochannel location. A progress report on the data reduction is to be provided at this meeting.

Task 2b - 300-FF-5 Wide Geological Characterization

Work continues to utilize the stratigraphic information gained from the new wells drilled to update the fence diagram for the 300 Area. A draft report describing this information is currently undergoing WHC internal review.

0 Remedial Investigation Activities (continued)

Task 3--Soil Investigation

Surface Radiation Survey

Task completed.

Soil Sampling and Analysis

Physical (Table 31) and chemical sampling (Table 35) of all new wells has been completed. Over 200 chemical samples, including QC and those sent to the field screening laboratory, have been taken. The results of physical property testing are being tabulated and prepared for transmittal to the HEIS database. A revised test plan to address leach and adsorption tests that will be conducted during FY 1992 is under WHC review. Additional WHC review and comment incorporation is necessary before the draft plans will be ready for informal regulatory review.

Task 4--Groundwater Investigation

Task 4a - Hydrostratigraphy

Task 4b - Contaminant Distribution in Soil and Groundwater

Ongoing with the use of existing data gathered from the RI. The first round of groundwater sampling for CERCLA needs in the 300 Area (63 wells) began on December 2 and was completed on January 16. The first round 300-FF-5 samples are being analyzed to analytical level IV (CLP), while the 20 wells sampled by RCRA are being analyzed to analytical level III (SW-846).

Task 4c - Hydraulic Properties

Twenty-one transducers (4 additional since last month) have been installed in wells 1-7, 1-8, 1-9, 1-16B, 1-18A,B,C, 3-9, 4-1, 4-7, 4-9, 1A,B,C, 3A, 4A,B, 7A,B,C, and 8A thus far. The transducer at the river monitoring station (SWS-1) has been receiving data since November 7. Installation of 5 more is scheduled to be completed by January 31, with the remaining 8 transducers to be installed during February.

Task 4d - Aquifer Intercommunication - Well 399-1-16D

A draft action plan for remediation of this well was received for review from the WHC Env. Field Services group on January 21, 1992. The present schedule for completion of remediation of this well is not until April, 1992.

Task 4e - Groundwater Modeling

A status report on simulation work performed regarding the planned tracer studies to be conducted in the 316-5 Process Trenches is scheduled for presentation at this meeting.

0 Remedial Investigation Activities (continued)

Task 5--Surface-Water and Sediment Investigation

Task 5a - Relative Data Compilation

Initiated in conjunction with site wide work and the 100 Areas. A draft report for WHC review was received in mid November. This information will be included in the project files for use during the data evaluation phase.

Task 5b - Riverbank Springs

The river stage level continues to be at high levels which have prevented the acquisition of spring samples. Monitoring of the SWS-1 monitoring station will continue and sampling will occur when a low period can be predicted (likely next August to September).

Task 5c - Near Shore River Water and Sediment

Approximately 40 near shore river water samples (defined in Table 6 of the SAP) will be taken during the completion of Task 5b, and submitted to OSM for analysis. This work can not be accomplished until Task 5b is performed in order to provide the correlation with the riverbank springs.

Task 5d - Transect River Water

Coordination with the L-045 Project for the Process Sewer effluent treatment facility will continue. Assessment of the data obtained from this work will define further characterization activities. **A copy of a draft report on the results of characterization activities was received for review on January 14.**

Task 5e - River Stage

One of the two river stage measurement stations has been active since November 7 and the other is being located and activated if possible.

Task 5f - Boundary Conditions Along the Columbia River

Scheduled for FY 1992, if required.

Task 5g - Numerical Algorithms for Groundwater to Surface Water Dispersion

Scheduled for FY 1992, if required.

0 Remedial Investigation Activities (continued)

Task 6--Air Investigation

(Conducted in Source Operable Units and in coordination with well drilling activities.)

Task 7--Biota Investigations

Riparian Plants

All (199) of the plant tissue samples (willow and mulberry tree, and reed canary grass) to be collected as part of the subtask for Riparian plants have been sampled. An additional 31 samples were collected at the spring locations. They will all be analyzed for metals and radionuclides as described in Table 8, Section 3.2 of the SAP. A total of 22 sample locations were identified. All of the samples have now been sent to TMA/Norcal for analysis.

Aquatic Biota

At the present time sampling has been completed at 4 of 12 stations identified in the work plan for periphyton. The remaining 8 stations have been placed and will be sampled during the second round of sampling. An update on the schedule and types of biota to be sampled will be provided in further detail at the February UMM.

Task 8--Data Evaluation

Performed with data available from the RI when gathered, and supplemented as new information becomes available.

Task 9--Baseline Risk Assessment

Efforts will be initiated soon to begin this task with available data. The site wide methodology being developed as part of Milestone M-29-00 will be utilized as soon as it becomes available. **Development of the 300-FF-5 risk assessment will be initiated in conjunction with the risk assessment for the 300-FF-1 OU.**

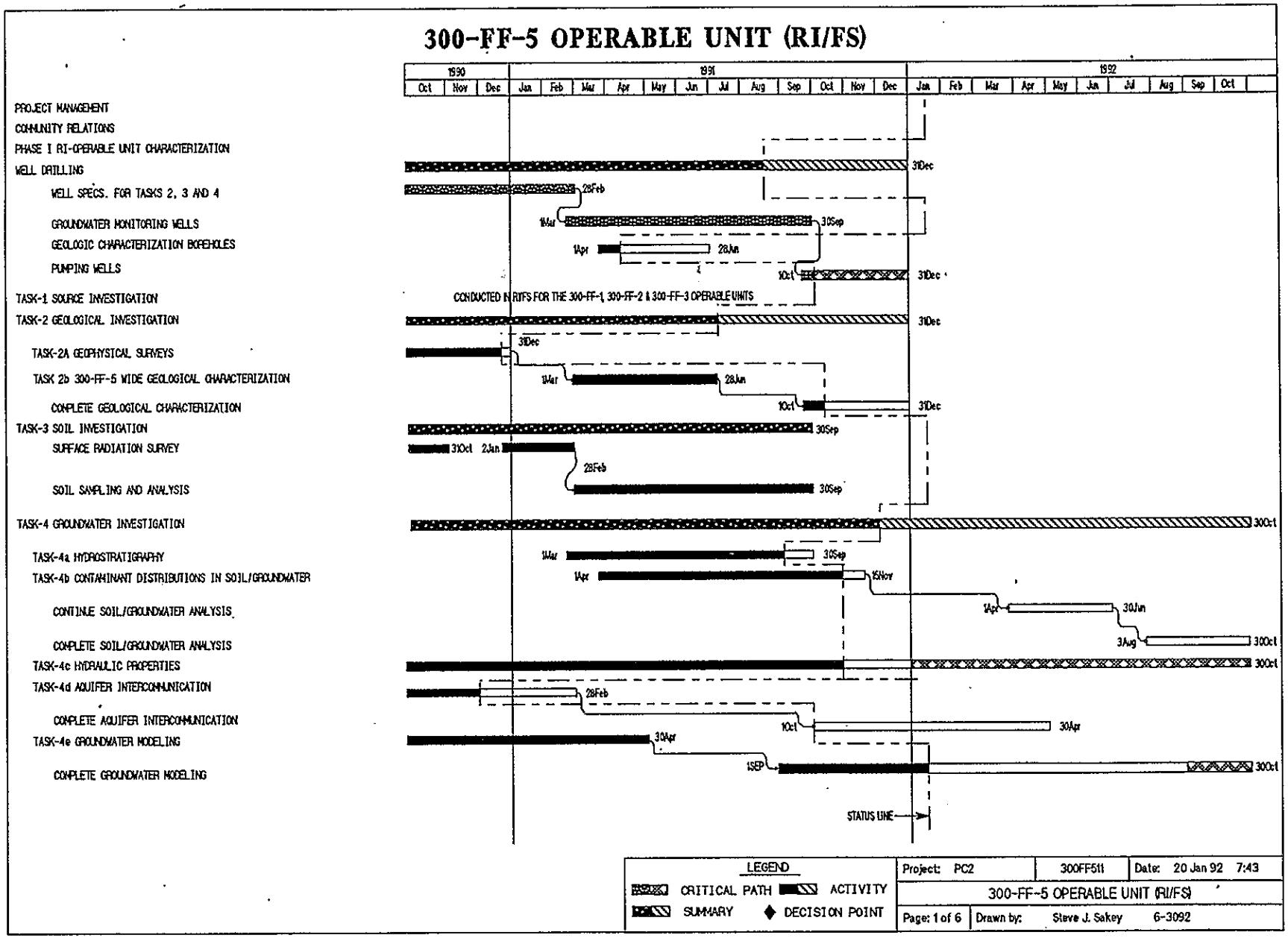
Task 10--Preliminary Site Characterization Summary Report

Task 10a - Draft Report
Task 10b - Final Report

Phase 1 Feasibility Study - Remedial Alternatives Development

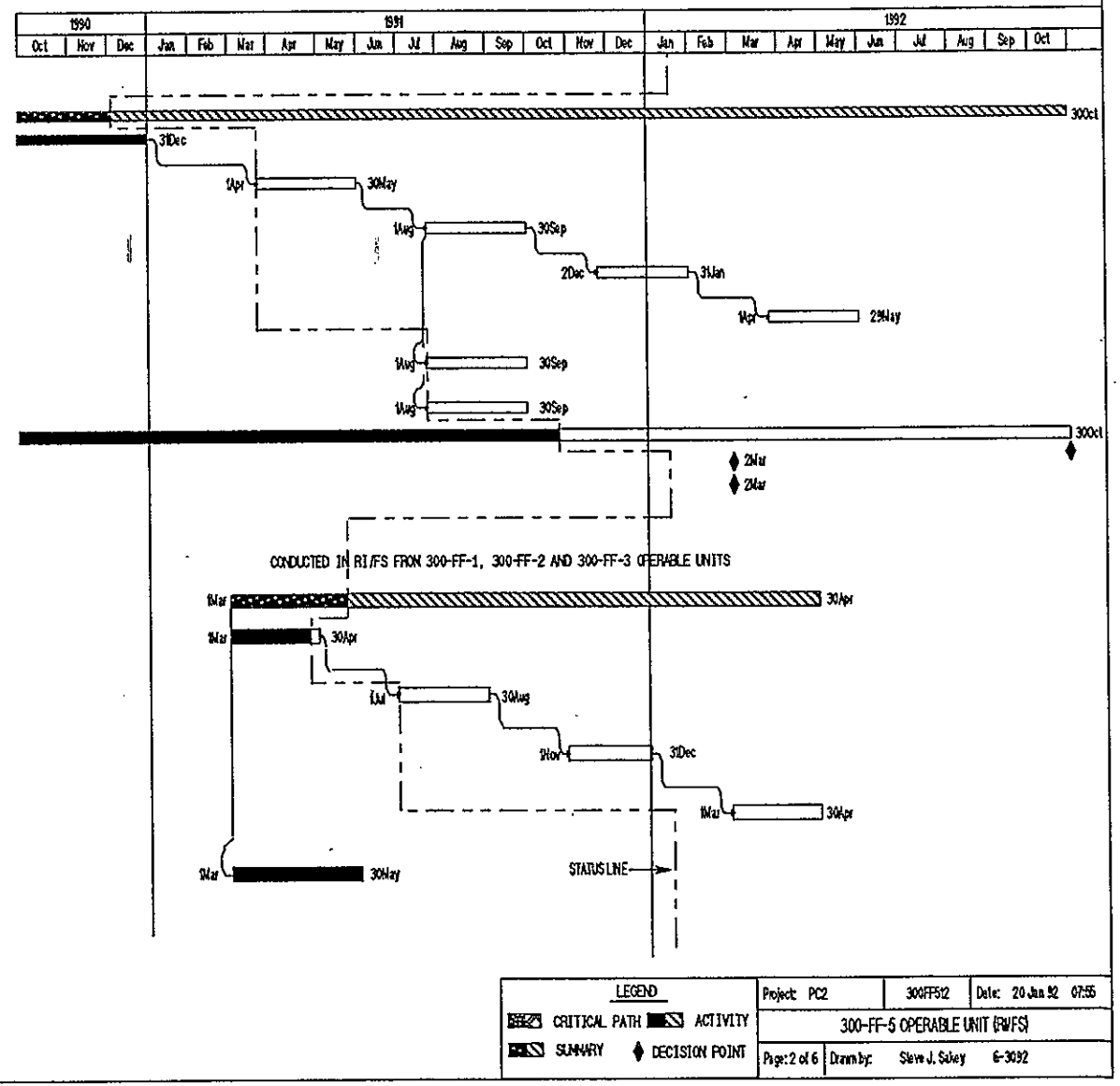
Efforts will be initiated soon to begin this task with available data.

BASELINE SCHEDULE STATUS



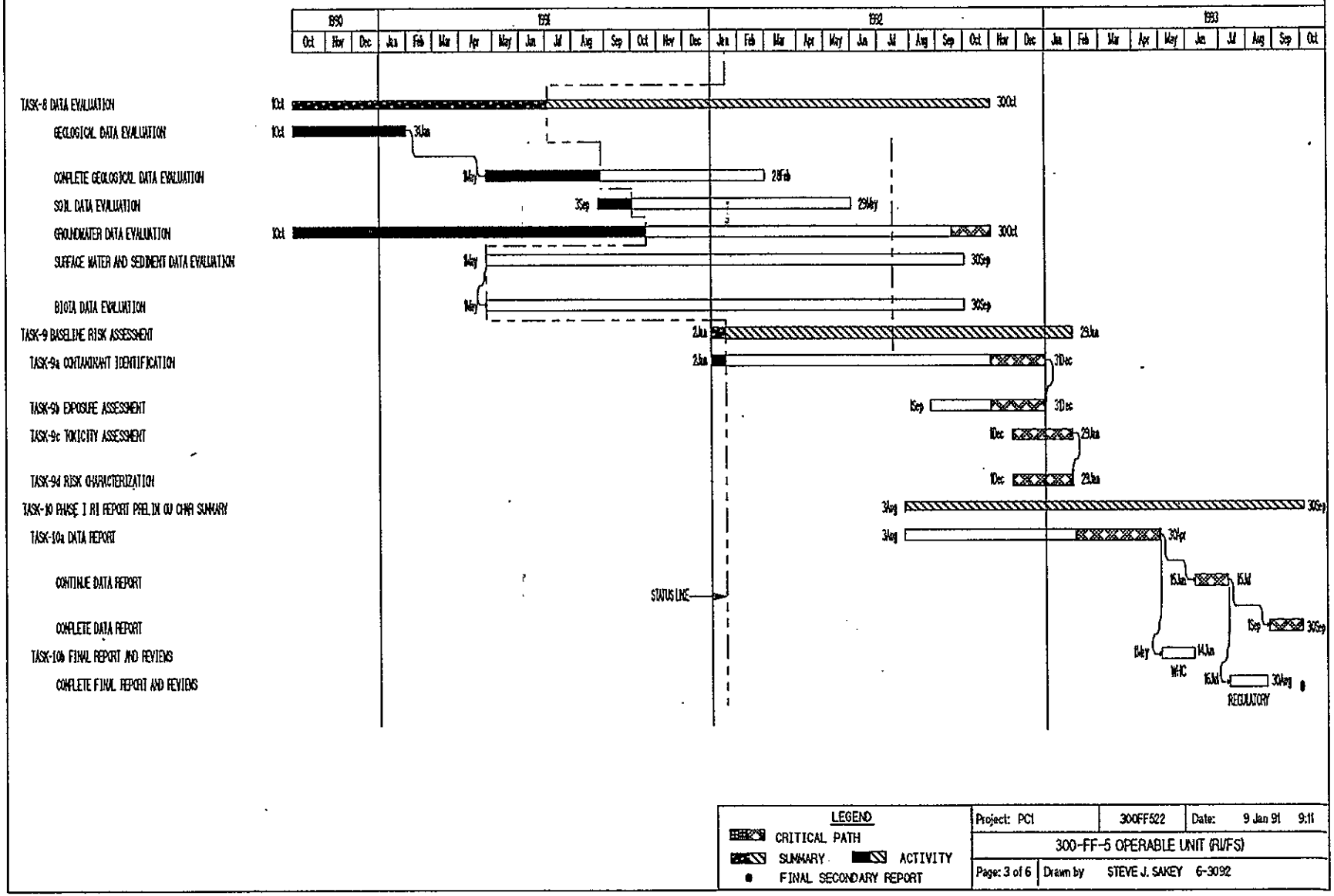
BASELINE SCHEDULE STATUS

300-FF-5 OPERABLE UNIT (RI/FS)



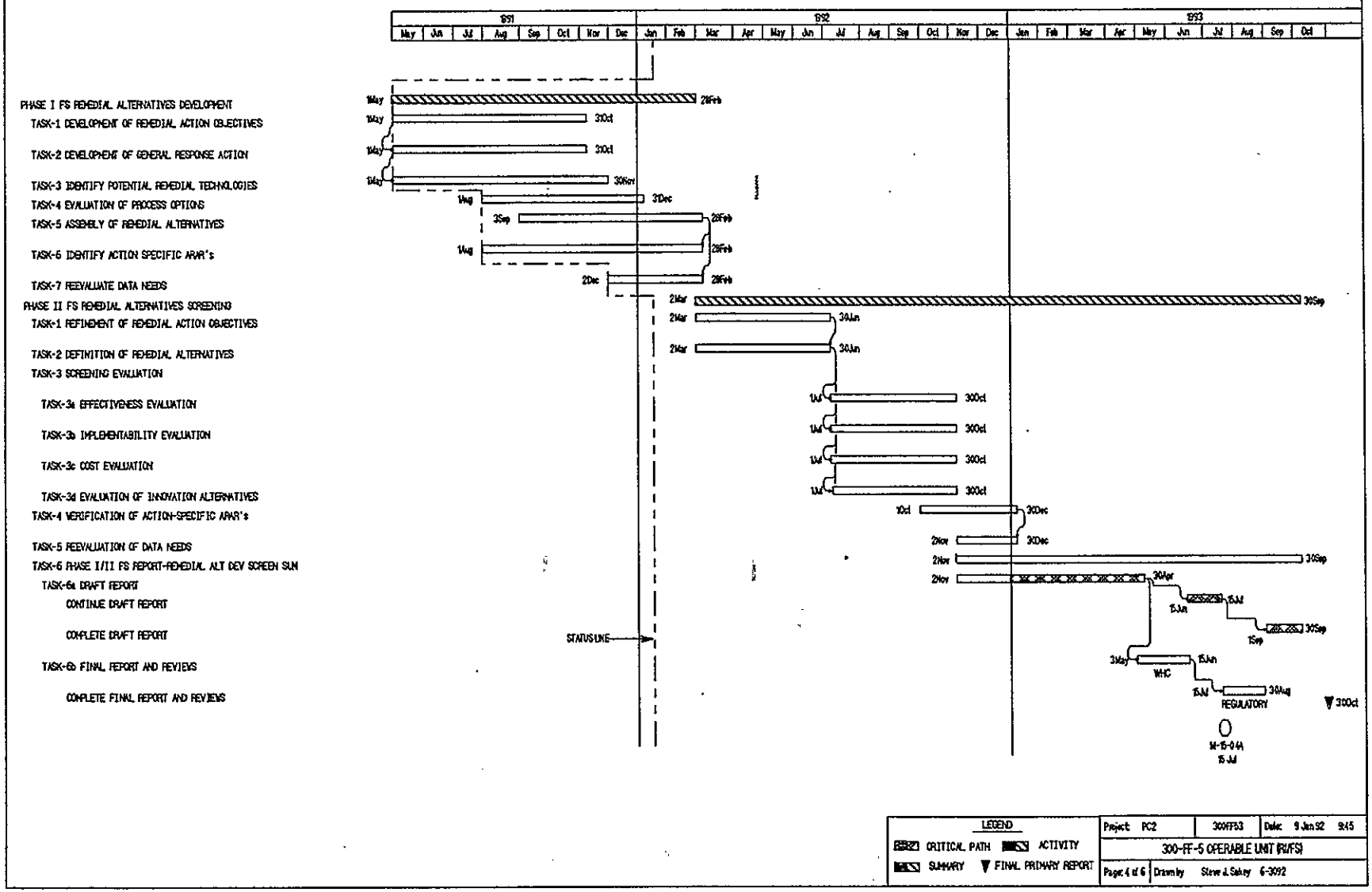
BASELINE SCHEDULE STATUS

300-FF-5 OPERABLE UNIT (RI/FS)



BASELINE SCHEDULE STATUS

300-FF-5 OPERABLE UNIT (RI/FS)



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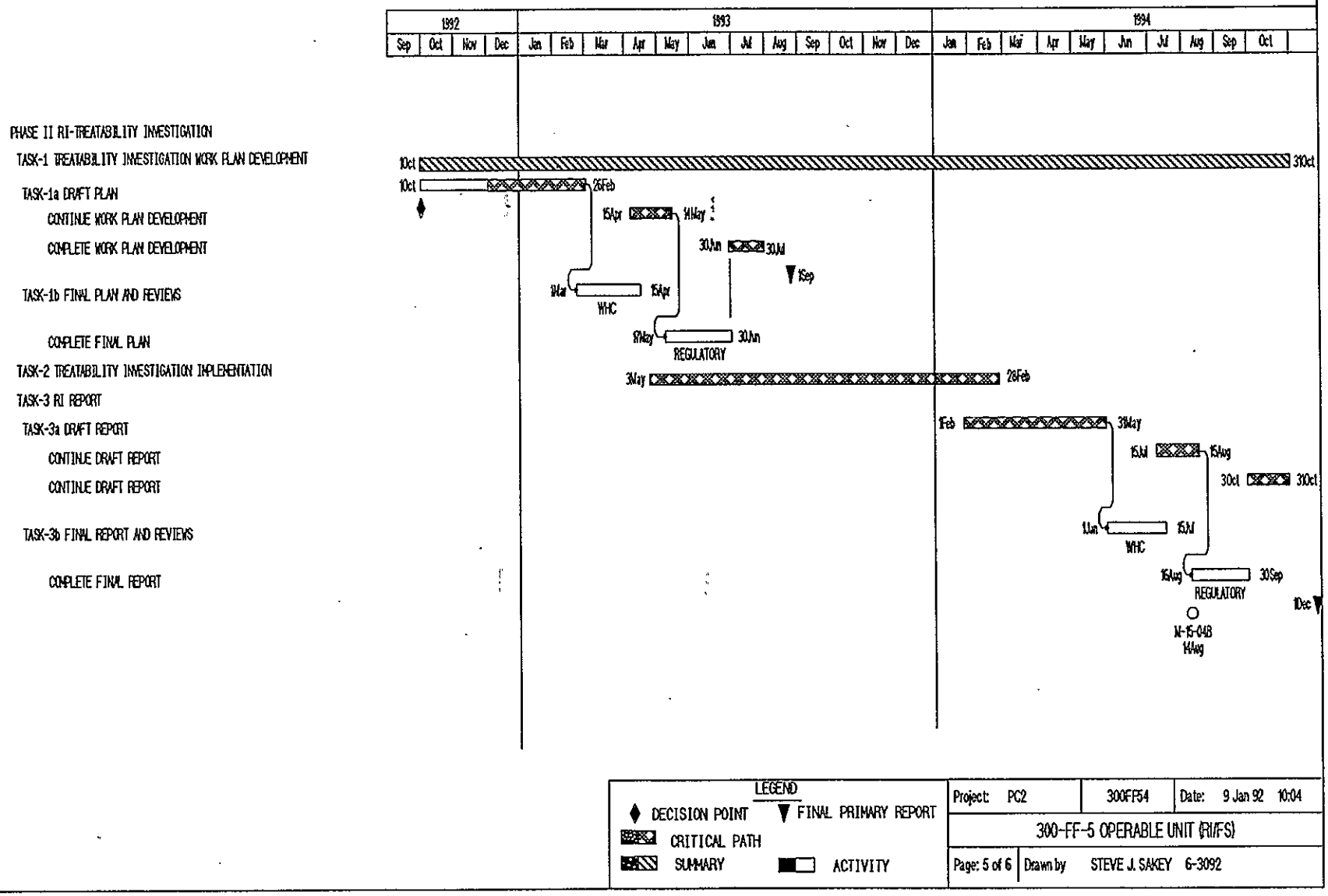
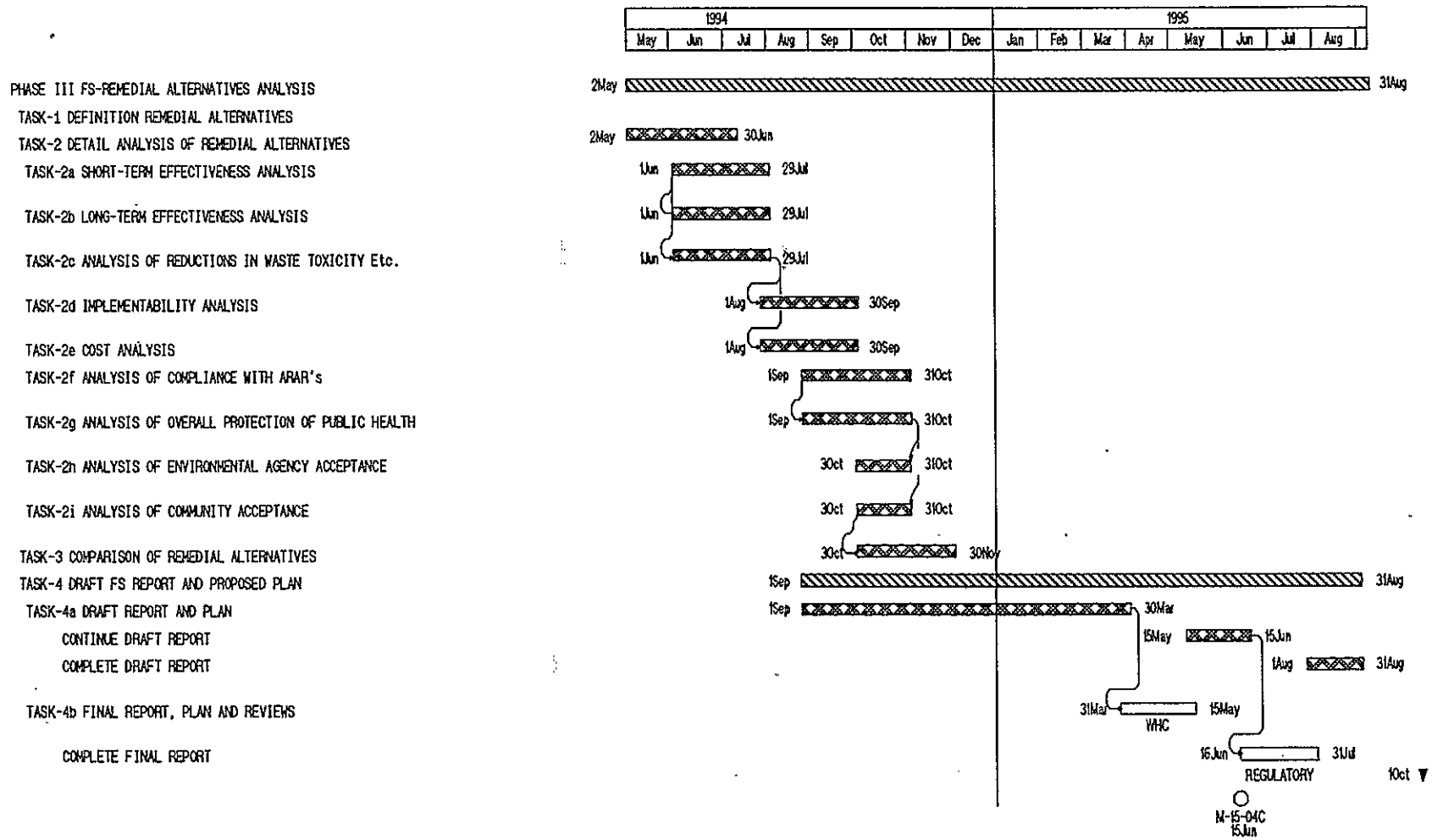
300-FF-5 OPERABLE UNIT (RI/FS)



BASELINE SCHEDULE STATUS

300-FF-5 OPERABLE UNIT (RI/FS)



LEGEND			
CRITICAL PATH	ACTIVITY	Project: PC2	300FF55	Date: 9 Jan 92 10:22
SUMMARY	▼ FINAL PRIMARY REPORT	300-FF-5 OPERABLE UNIT (RI/FS)		
		Page: 6 of 6	Drawn by STEVE J. SAKEY 6-3092	

Attachment #7

Change Number	APPROVED DOCUMENT CHANGE CONTROL FORM	Date
300-FF-5-10	Do not use blue ink. Type or print in black.	11/18/91

Document Number & Title	Date Document Last Issued
DOE/RL 89-14, "Remedial Investigation/ Feasibility Study Work Plan for the 300-FF-5 Operable Unit, Hanford Site, Richland, Washington	June, 1990

Originator	Phone
L. C. Hulstrom, 300-FF-5 RI Coordinator	(509) 376-4034

Description of Change

Task 5 - Surface Water and Sediment Investigation describes the process for obtaining information relevant to spring discharge from the 300 Area into the Columbia River. Task 5b in the work plan describes a one time sampling event to take place in late summer or early fall when the river stage is generally lowest. This same approach is described in Table 6 of the Sampling and Analysis Plan. The approved work plan schedule however shows four periods of sampling.

Note: Include affected page number Section 5.3.5 (WP-179) and Section 2.0 (SAP/FSP-24), and the approved work plan schedule

Justification and Impact of Change

An error was made during the development of the work plan schedule which is inconsistent with the remainder of the work plan. The schedule should be changed to show one period of sampling. This sampling will take place during the period when the river is at its lowest stage. This generally occurs around late summer to early fall.

9212551436

E. D. Goller Eric Goller Dec. 11, 1991
DOE Unit Manager Date

D. R. Einan David R. Einan 2 Dec 91
Lead Regulatory Unit Manager Date

Per Action Plan for Implementation of the Hanford Consent Order and Compliance Agreement Section 9.3

Change Number	APPROVED DOCUMENT CHANGE CONTROL FORM	Date
300-FF-5-11	Do not use blue ink. Type or print in black.	11/18/91

Document Number & Title	Date Document Last Issued
DOE/RL 89-14, "Remedial Investigation/ Feasibility Study Work Plan for the 300-FF-5 Operable Unit, Hanford Site, Richland, Washington	June, 1990

Originator	Phone
L. C. Hulstrom, 300-FF-5 RI Coordinator	(509) 376-4034

Description of Change

Task 7 - Biota Investigation, describes the collection of aquatic biota for obtaining information relevant to possible biotic contaminant transport pathways. Section 5.3.7.1 of the work plan and section 3.1 of the Sampling and Analysis Plan describe collection of samples during four time periods. One such time period (March - April) was duplicated over a yearly span.

Note: Include affected page number Section 5.3.7 (WP-187) and Section 3.1 (SAP/FSP-28), and the approved work plan schedule

Justification and Impact of Change

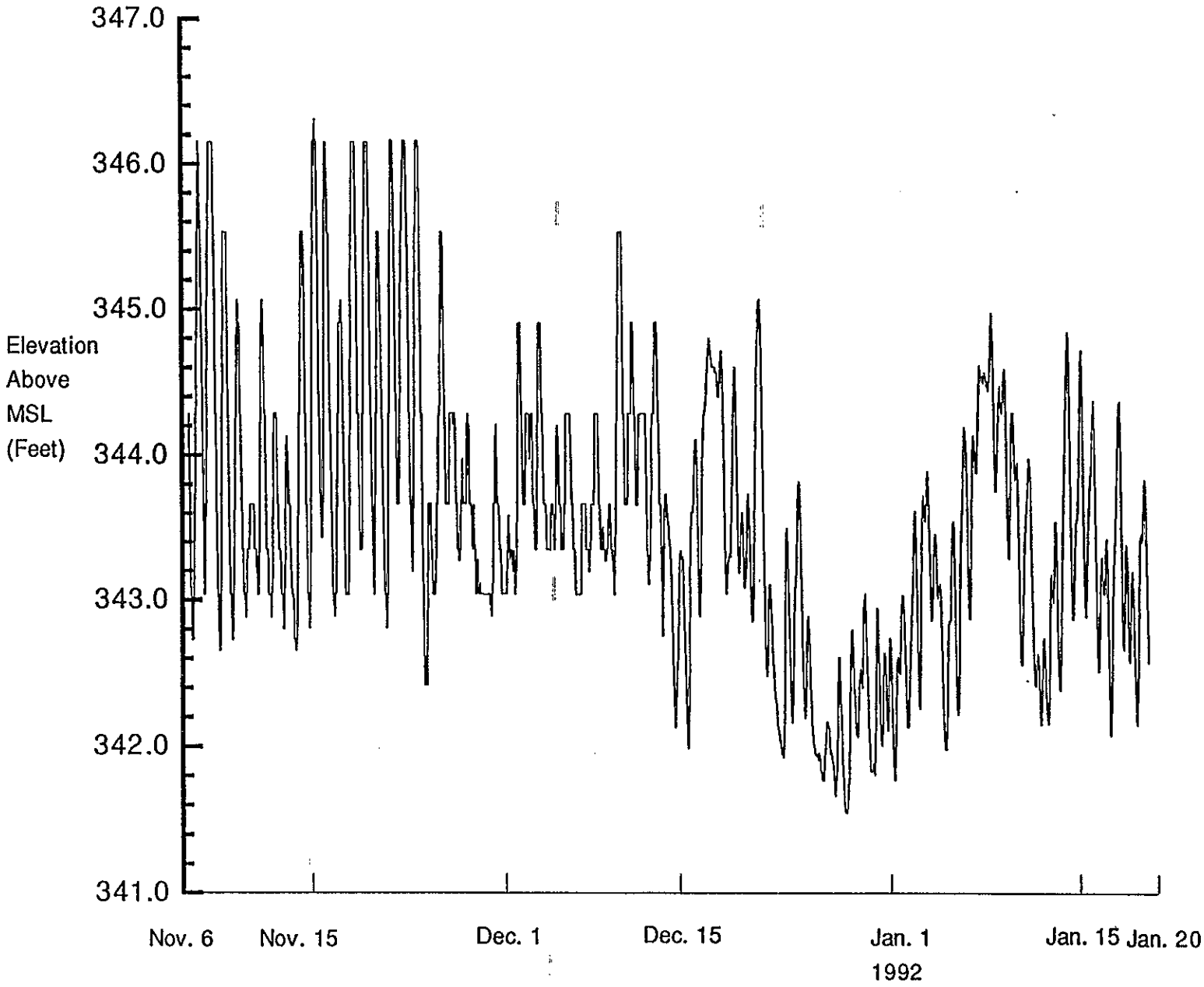
Several months ago discussions were held with the regulators regarding the same type of sampling for the 100 Areas. Instead of a quarterly approach a trimester or three period sampling approach was approved. For consistency and ease of comparison, a three period sampling approach (Fall, Winter, and Spring) is proposed for the 300-FF-5 aquatic biota sampling task. There is no major impact caused by the change.

E. D. Goller Ernest D. Goller — Dec 17, 1991
DOE Unit Manager — Date

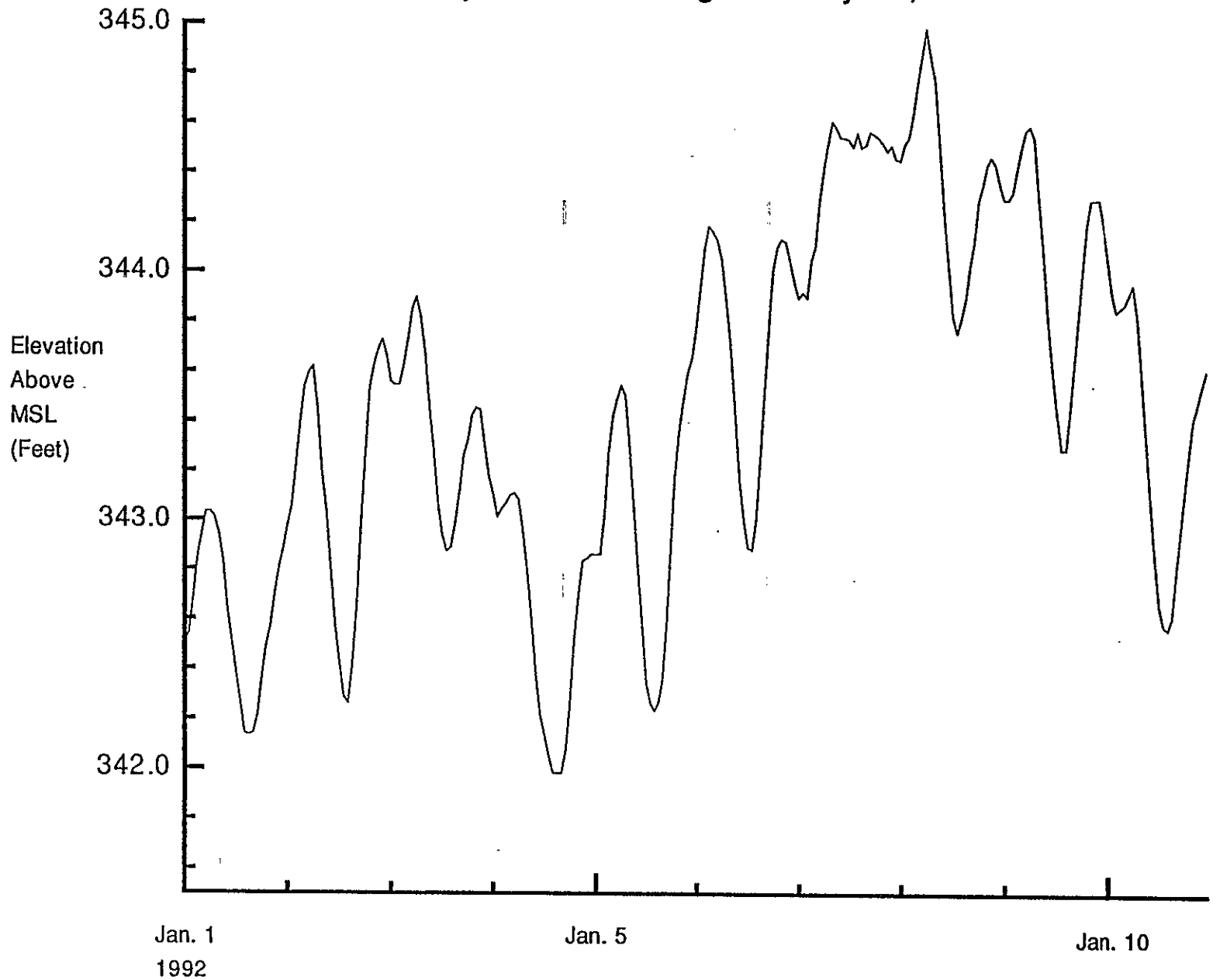
D. R. Einan David R. Einan — 4 Dec 91
Lead Regulatory Unit Manager — Date

Per Action Plan for Implementation of the Hanford Consent Order and Compliance Agreement Section 9.3

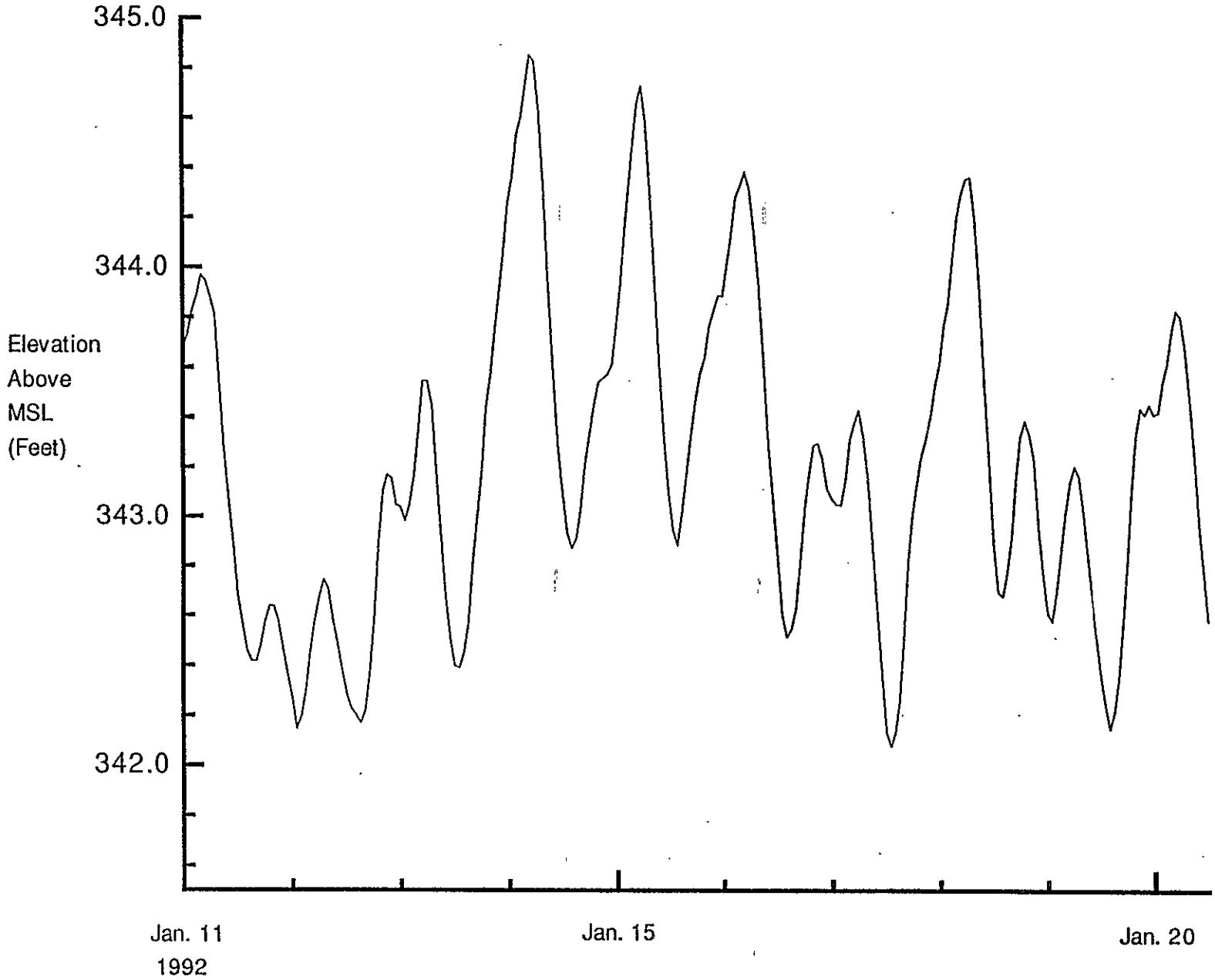
River Stage Fluctuations in the 300 Area (SWS-1)
November 6, 1991 through January 20, 1992



River Stage Fluctuations in the 300 Area (SWS-1)
January 1, 1992 through January 10, 1992



River Stage Fluctuations in the 300 Area (SWS-1)
January 11, 1992 through January 20, 1992



Attachment #9

300-FF-5 SURFACE GEOPHYSICS STATUS

JOSEPH KUNK

January 23, 1992

300-FF-5 GEOPHYSICAL SURVEY STATUS

EMI

Data Acquisition near borehole 1-18

GPR

Data Acquisition near River

SEISMICS

Data Analysis Schedule

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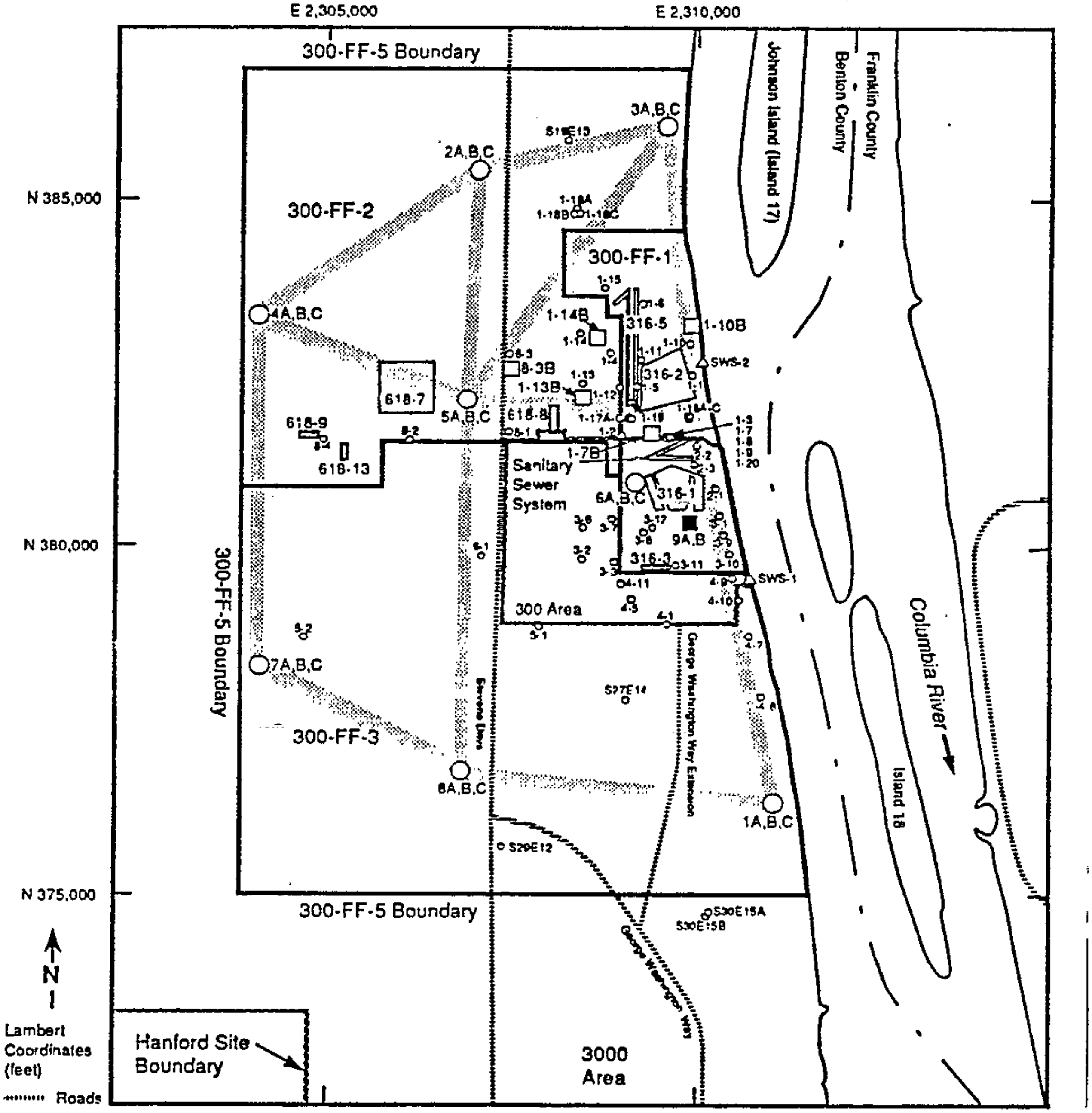
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300-FF-5 Boundary
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N 380,000
N 375,000
300-FF-2
300-FF-1
300-FF-3
300-FF-5 Boundary
300-FF-5 Boundary
2A,B,C
3A,B,C
4A,B,C
5A,B,C
6A,B,C
7A,B,C
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316-2
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SWS-1
Sanitary
Sewer
System
300 Area
3000
Area
Johnson Island (Island 17)
Franklin County
Benton County
Columbia River
Island 18
George Washington Way Extension
George Washington Way
Stevens Drive
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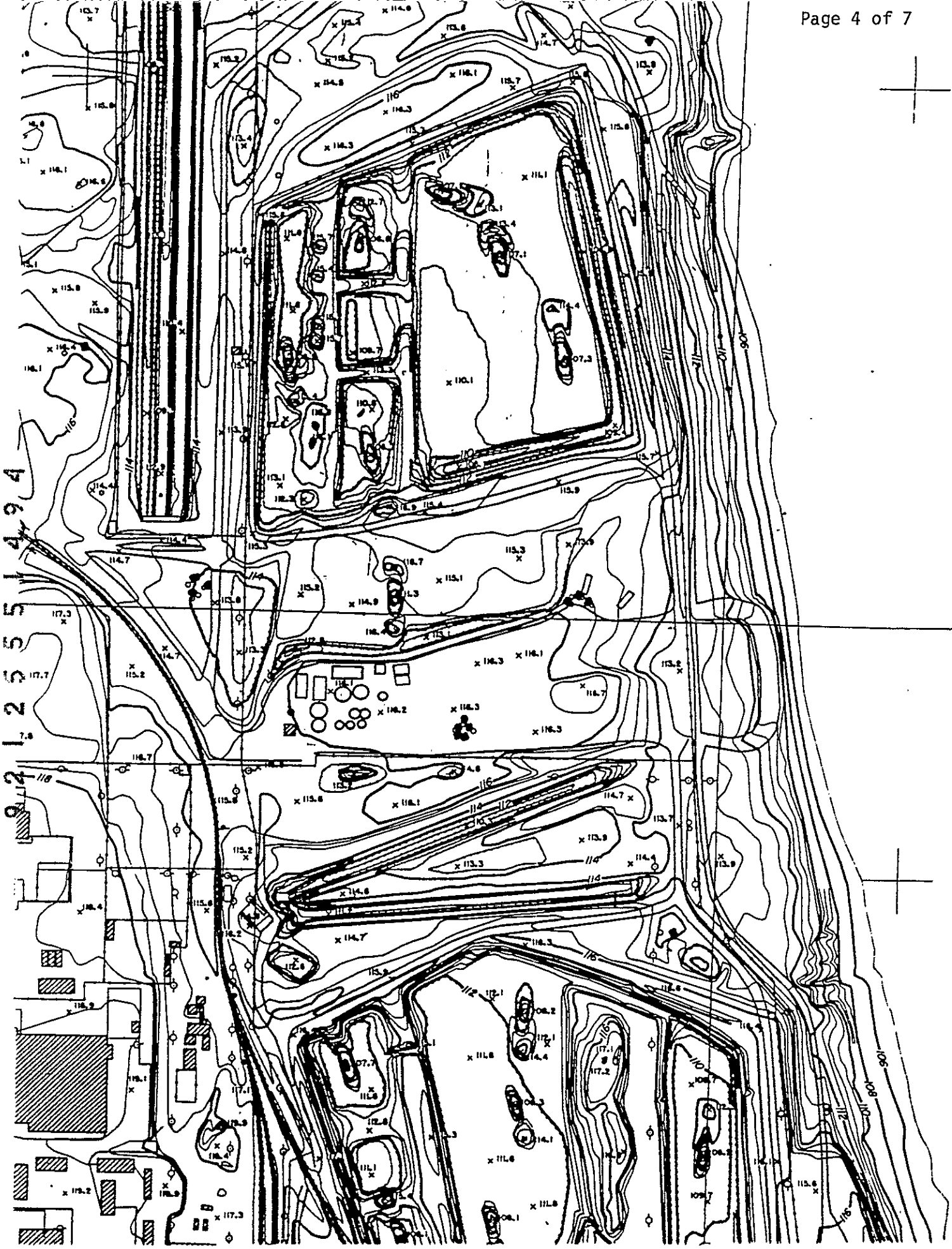
S30E15B
Hanford Site
Boundary
N
Lambert
Coordinates
(feet)
Roads

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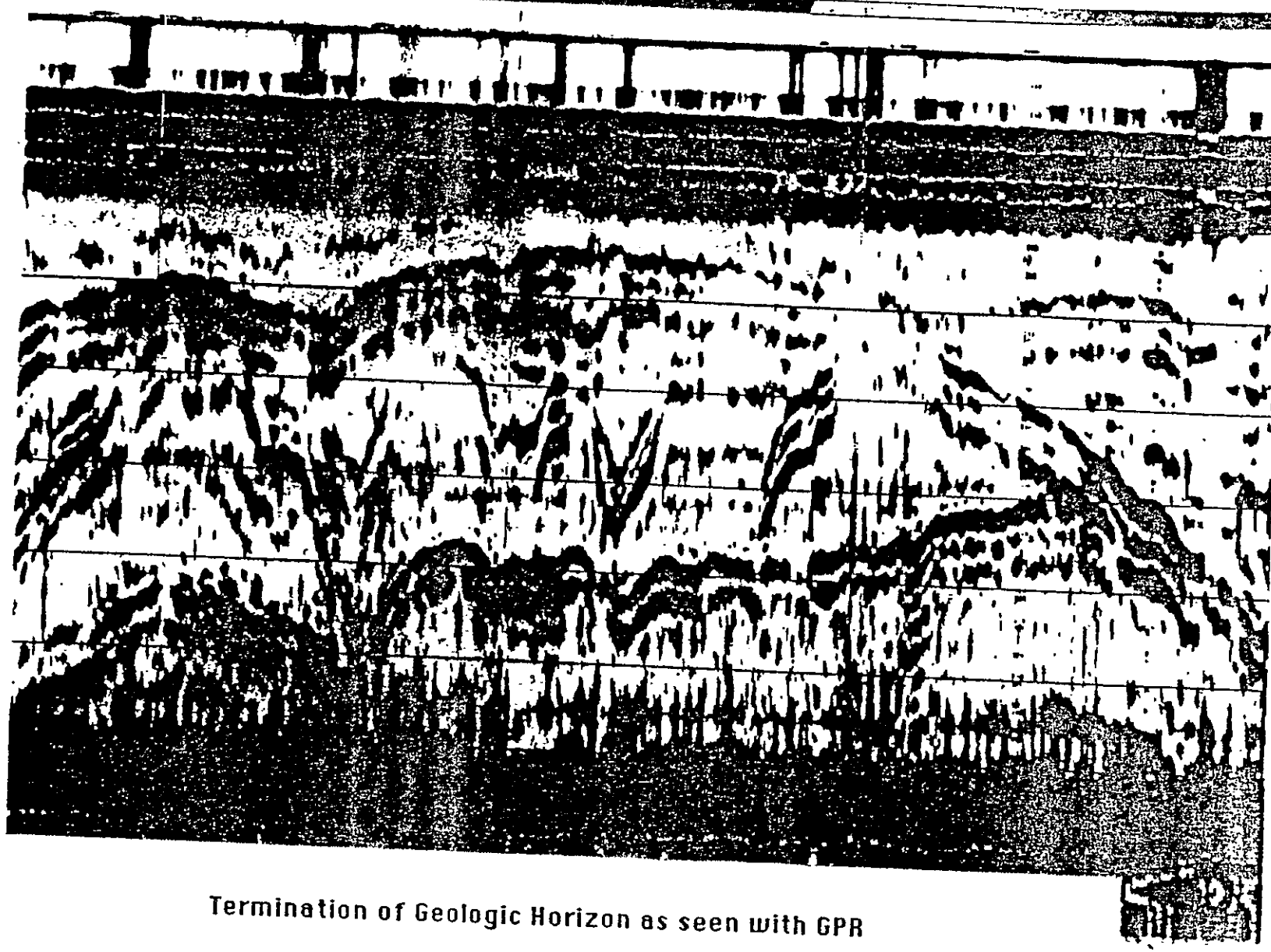
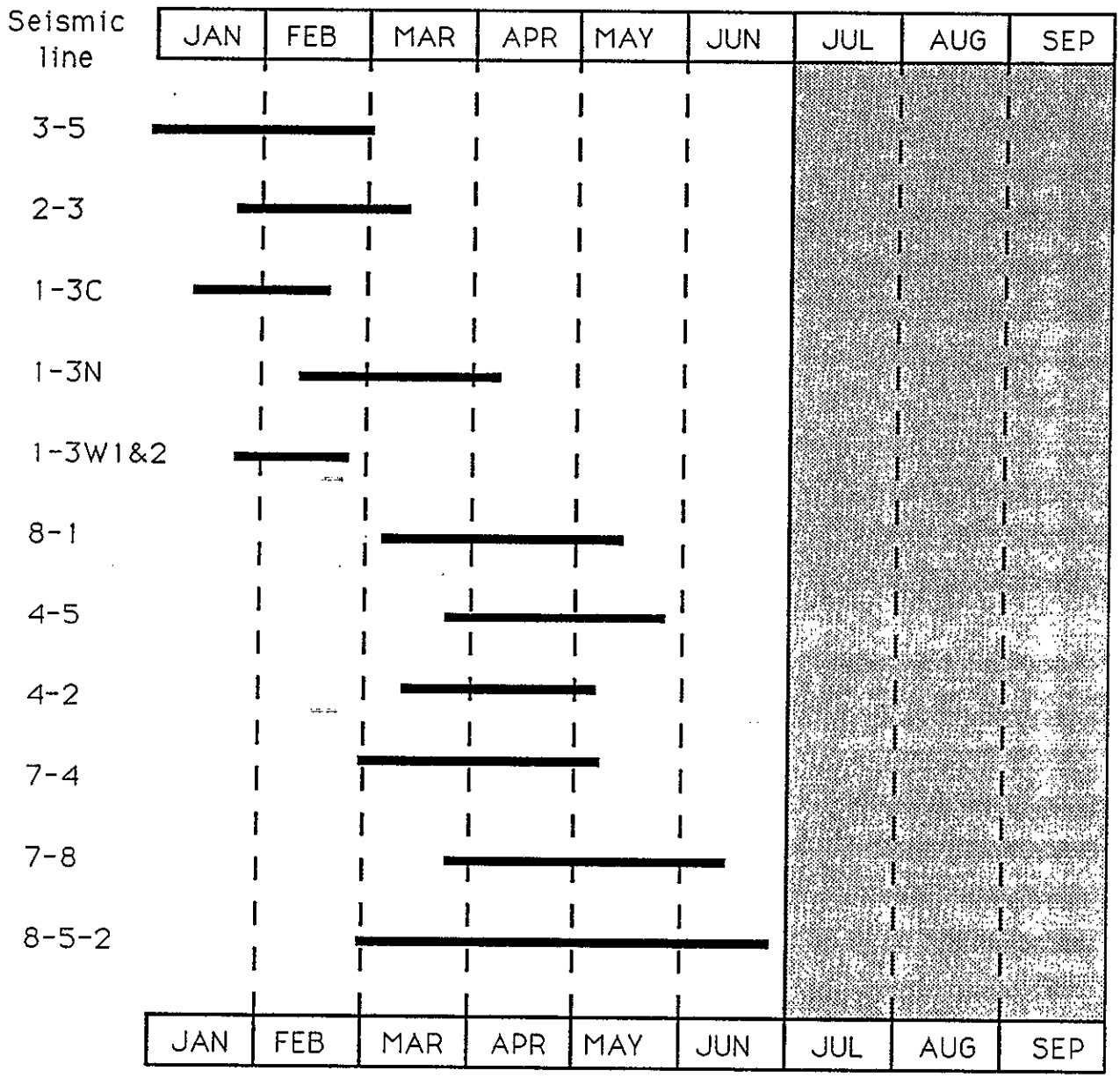
NO. 6
ELEV. 112.90



Termination of Geologic Horizon as seen with GPR

300-FF-5

SEISMIC PROCESSING SCHEDULE



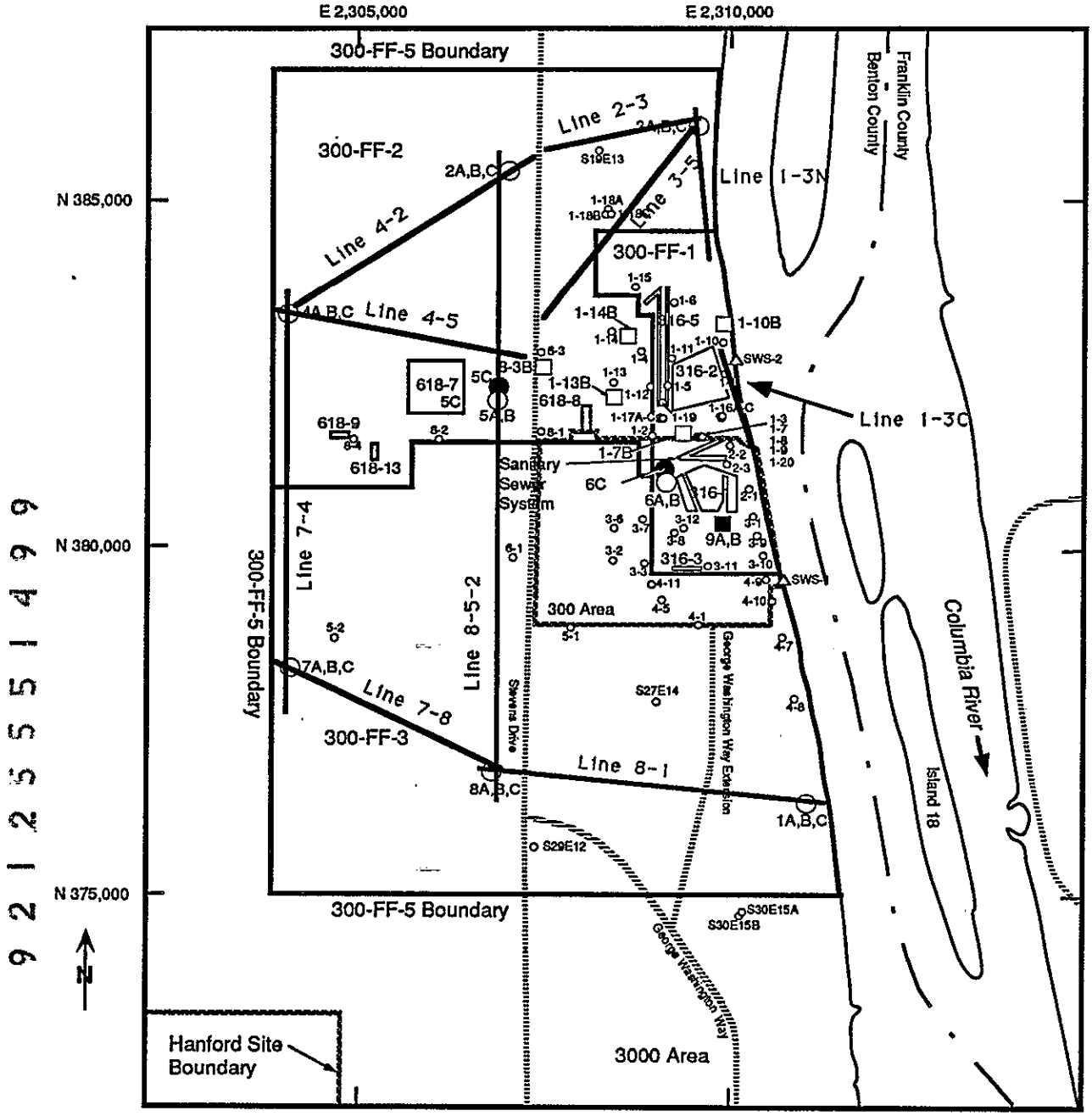
Attachment #10

300-FF-5 SURFACE GEOPHYSICS SUPPLEMENT

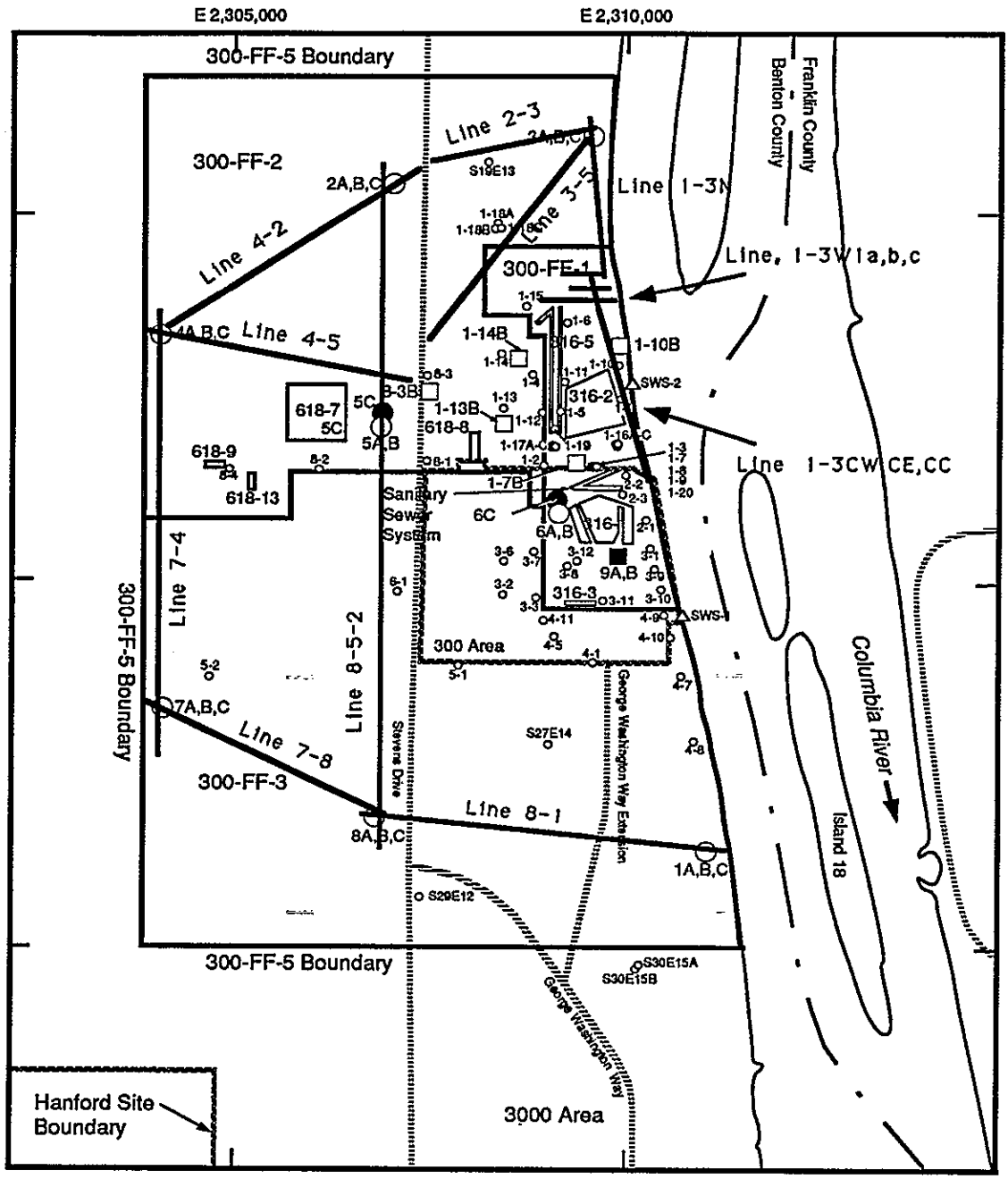
SURVEY LINE LOCATIONS

JOSEPH KUNK

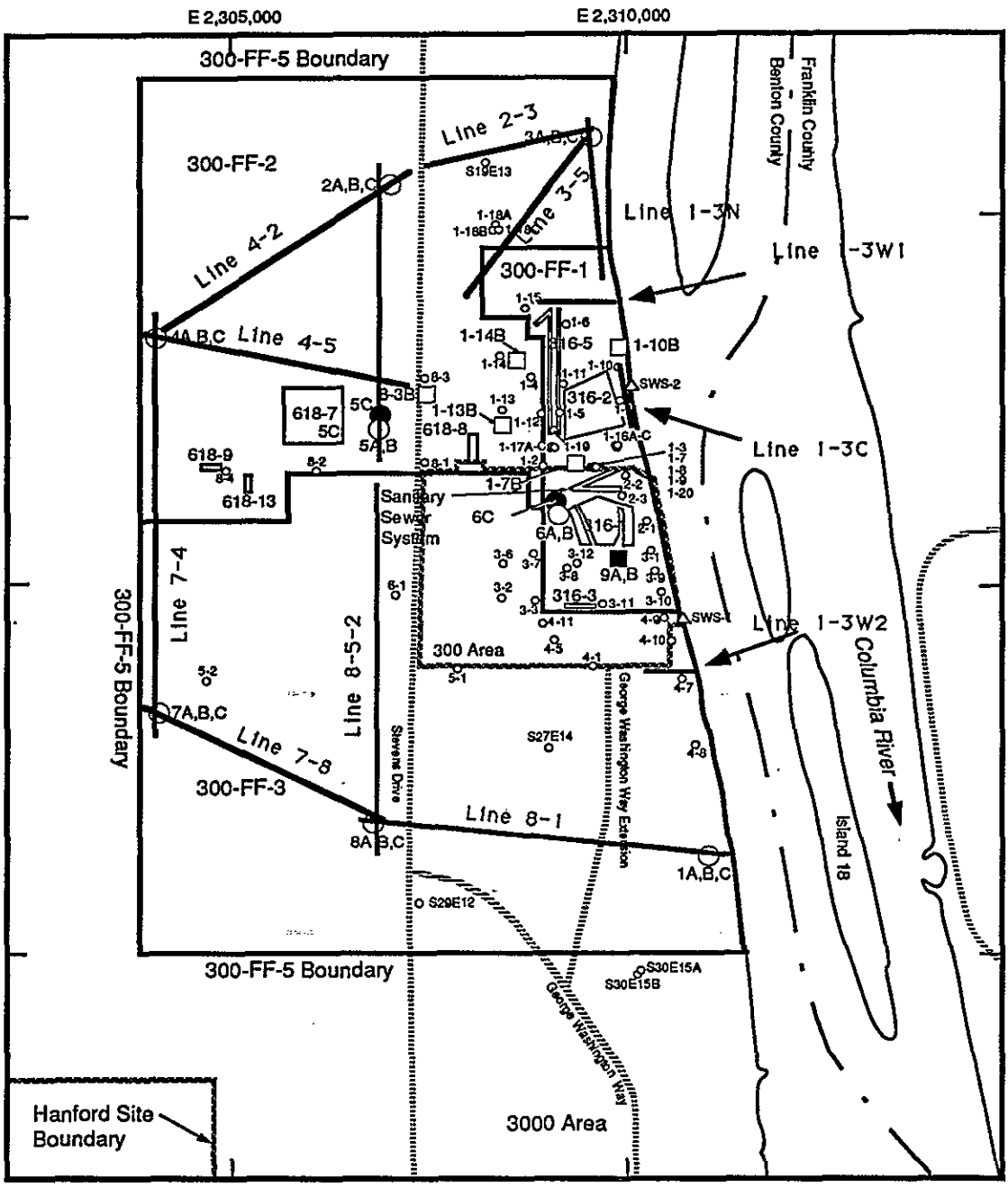
January 23, 1992



EMI Line Locations



GPR Line Locations



9212551501

Seismic Line Locations

LARGE SCALE TRACER SIMULATIONS FOR THE 316-5 TRENCH ABOVE THE 300-FF-5 OPERABLE UNIT

JANUARY 23, 1992

USE EXISTING PORFLO-3 FLOW AND TRANSPORT MODEL OF THE 300-FF-5 OPERABLE UNIT WITH THE MODIFICATIONS AGREED UPON AT THE THE MODELING MEETING OF 10/31/91.

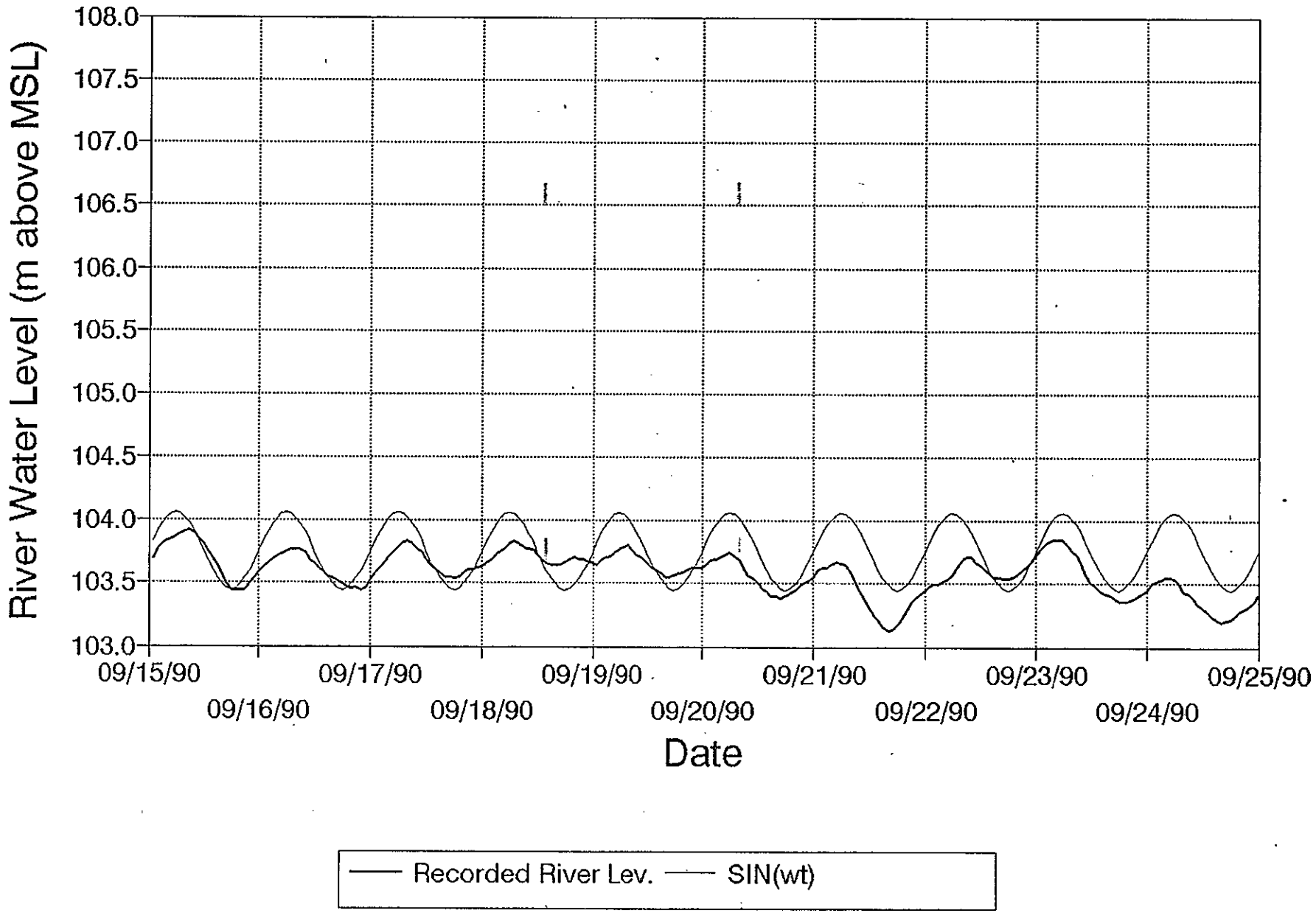
- ANISOTROPY: $K_x = K_y = 10\ K_z$
- SUPERIMPOSE DAILY RIVER STAGE FLUCTUATION UPON SEASONAL FLUCTUATION
- RELEASE EXACTLY 560 kg OF MASS TO OBTAIN ESTIMATES OF ACTUAL CONCENTRATION
- SHOW RESULTS OF RELEASES DURING HIGH AND LOW RIVER STAGES

RELEASE SCENARIOS

CASE	RELEASE DATE	TRACER MASS (kg)	RELEASE DURATION (hrs)	END DATE
I	6/15	560	1.0	9/30
II	6/15	1120	1.0	7/31
III	6/15	560	0.1	7/31
IV	6/15	560	10.0	7/31
V	10/1	560	1.0	11/30
VI	6/15	560	INSTANT	7/31

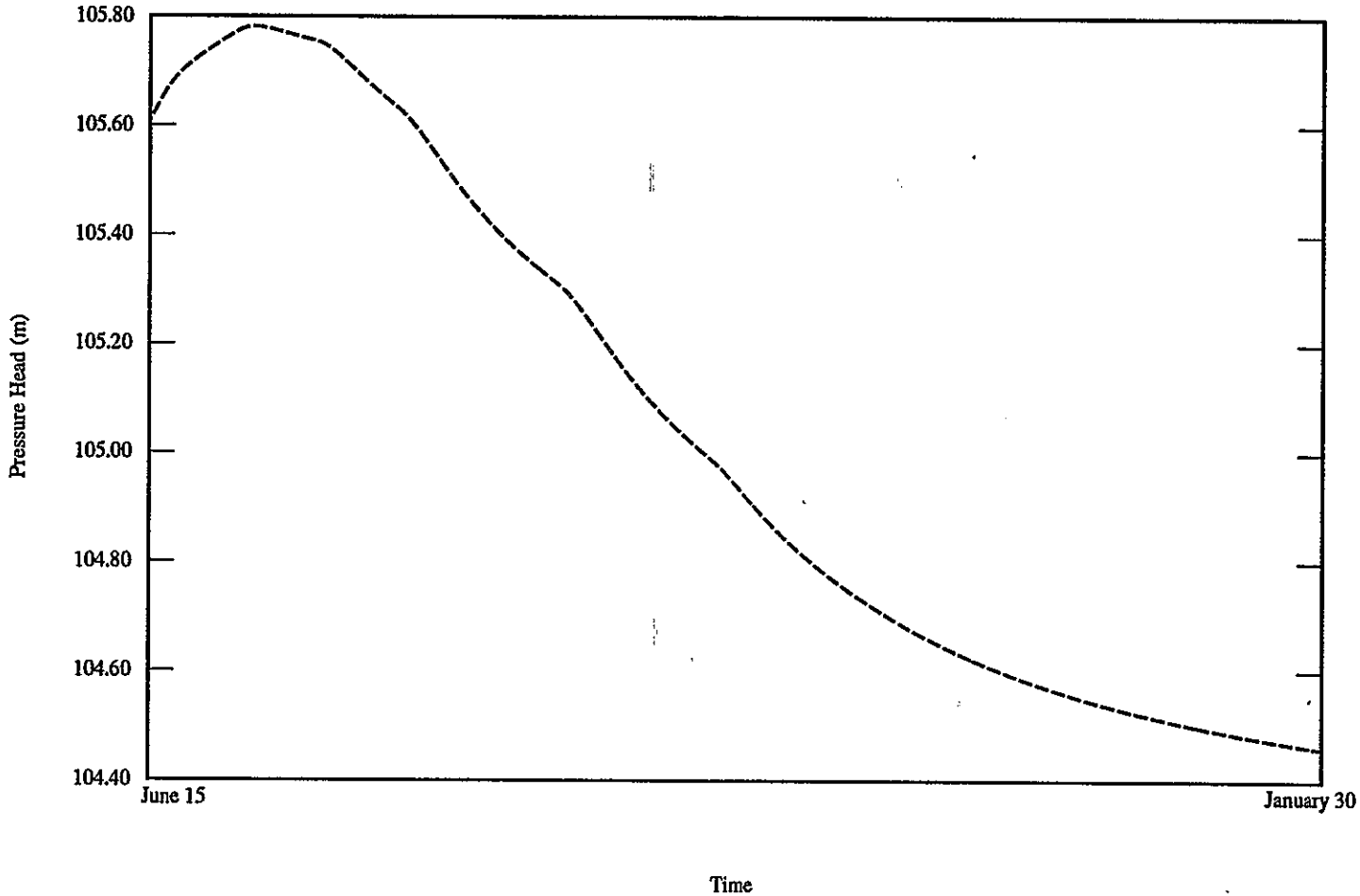
Sept. 1990 Columbia River Hydrograph

Recorded Level and SIN(wt)



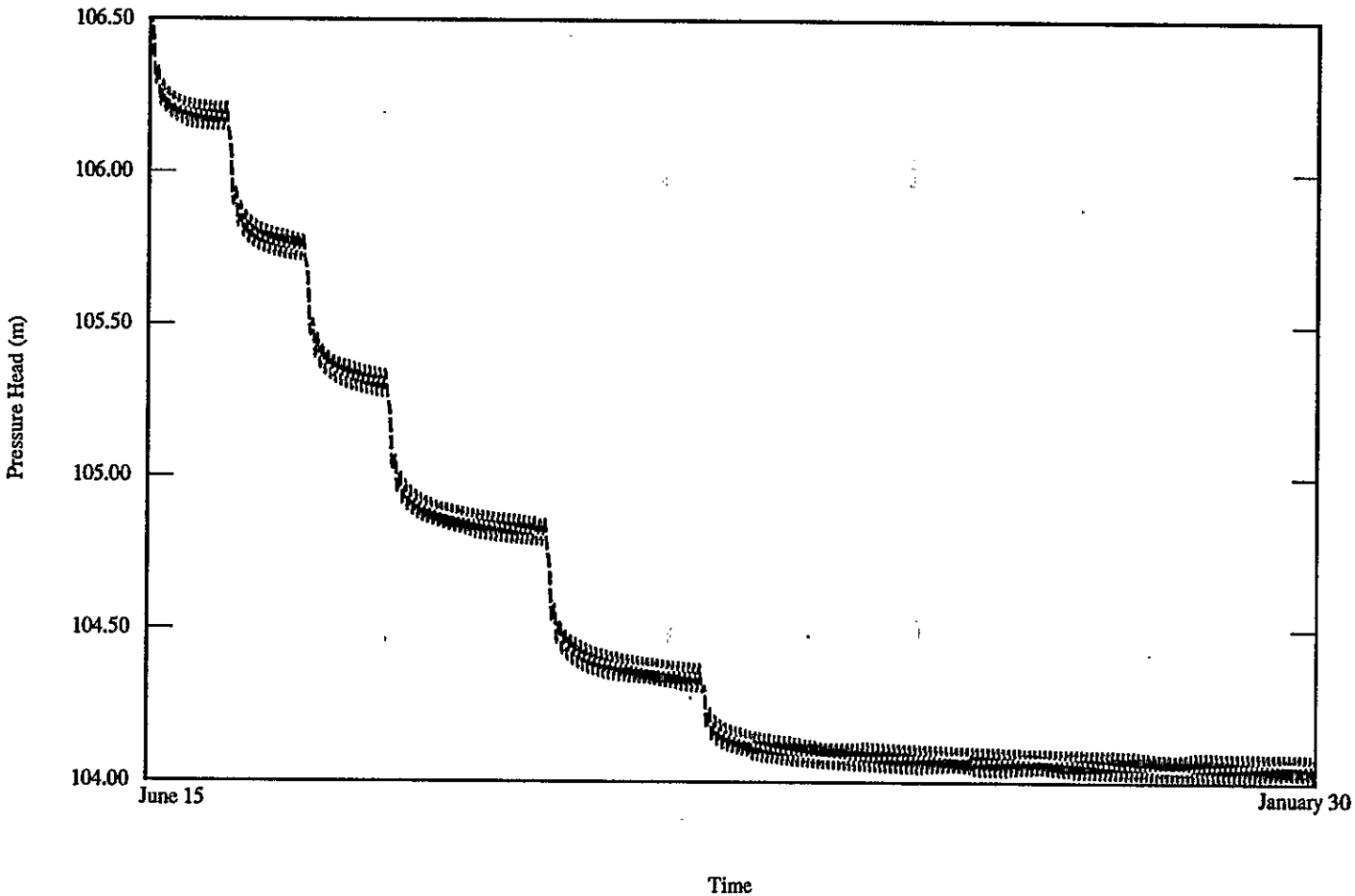
Time History of Pressure Head at Well 1-2

Porflo-3 Simulation of Large Scale Tracer Test at the 316-5 Trench



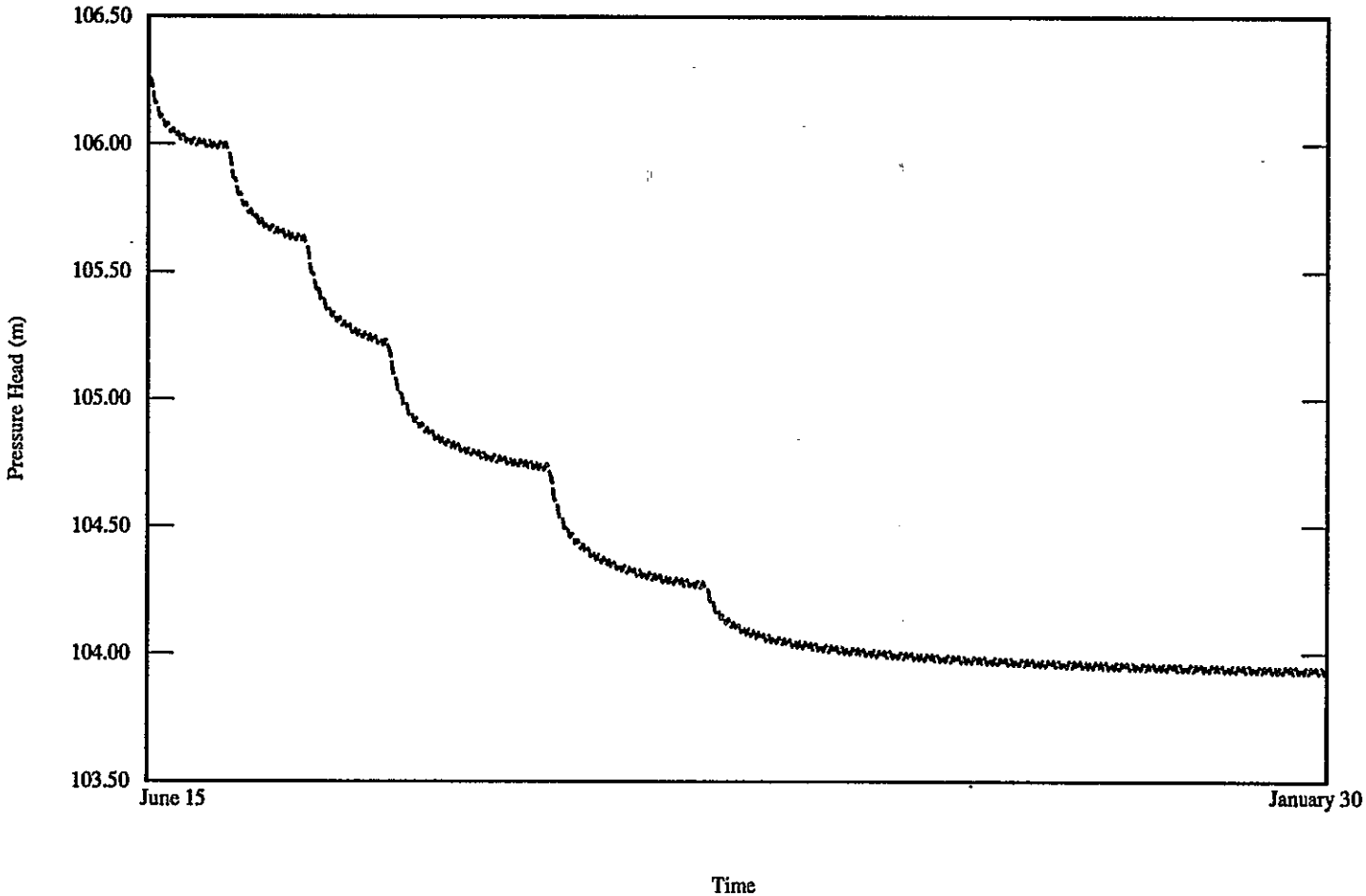
Time History of Pressure Head at Well 1-1

Porflo-3 Simulation of Large Scale Tracer Test at the 316-5 Trench



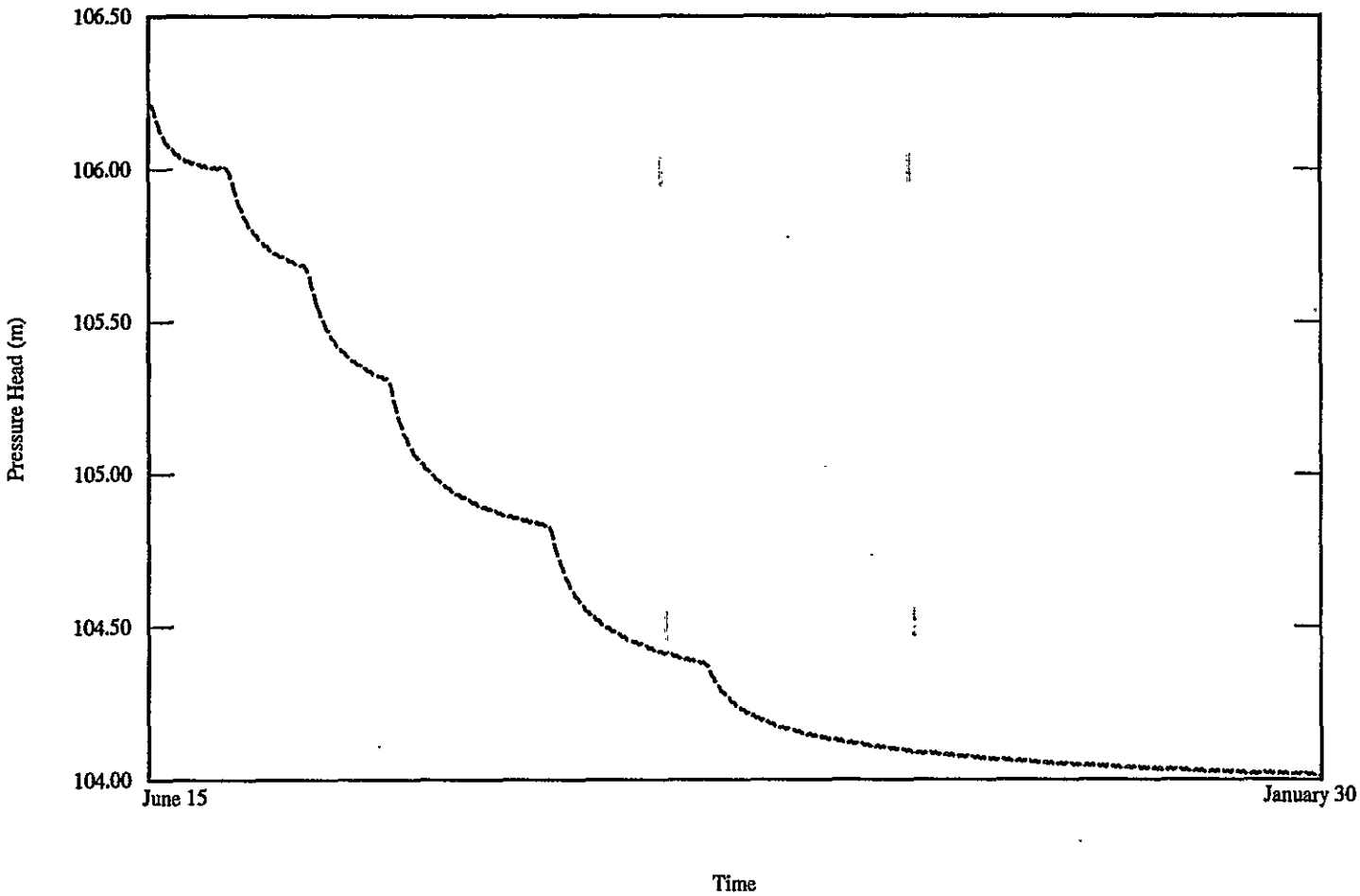
Time History of Pressure Head at Well 2-1

Porflo-3 Simulation of Large Scale Tracer Test at the 316-5 Trench



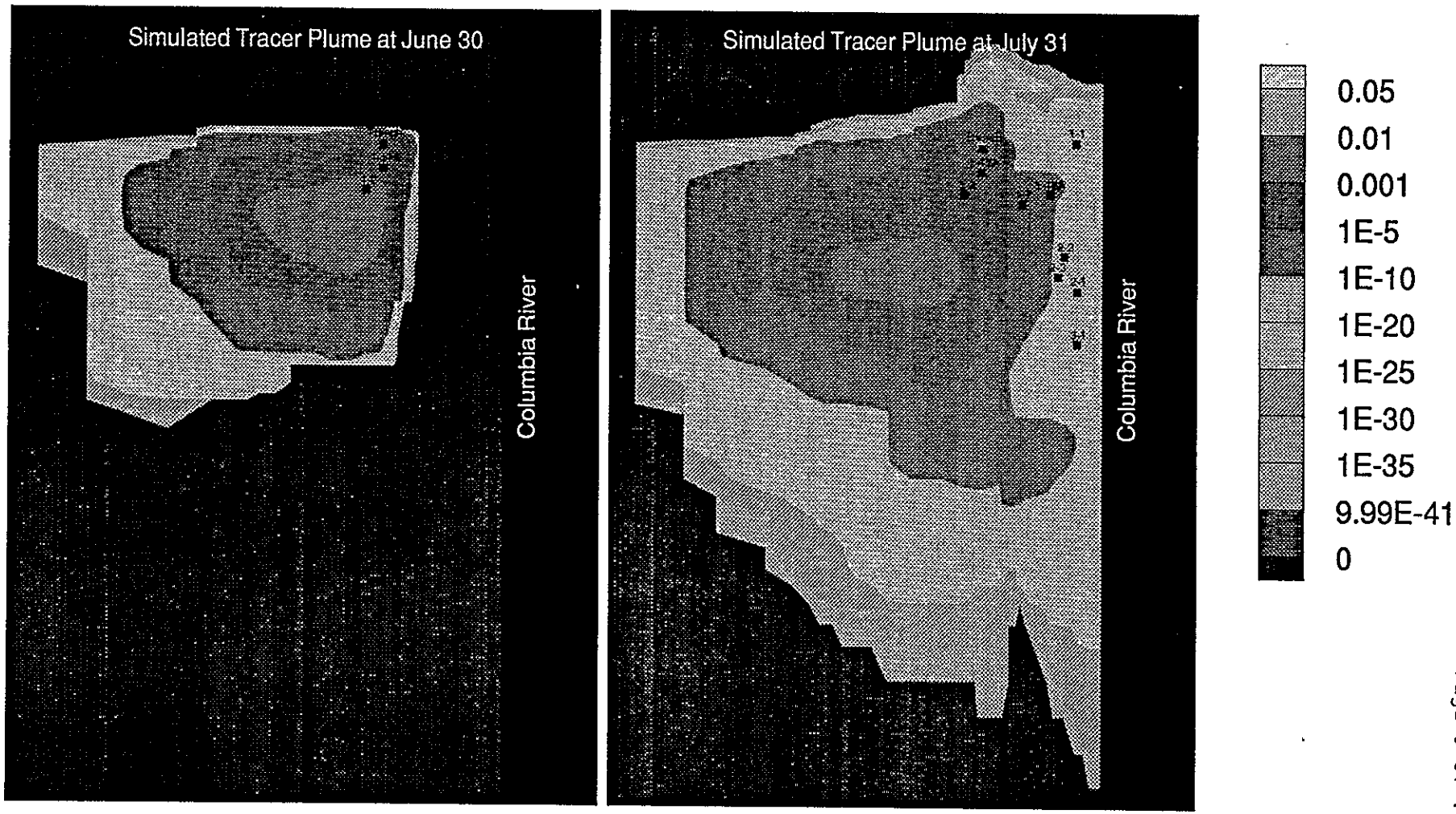
Time History of Pressure Head at Well 2-2

Porflo-3 Simulation of Large Scale Tracer Test at the 316-5 Trench



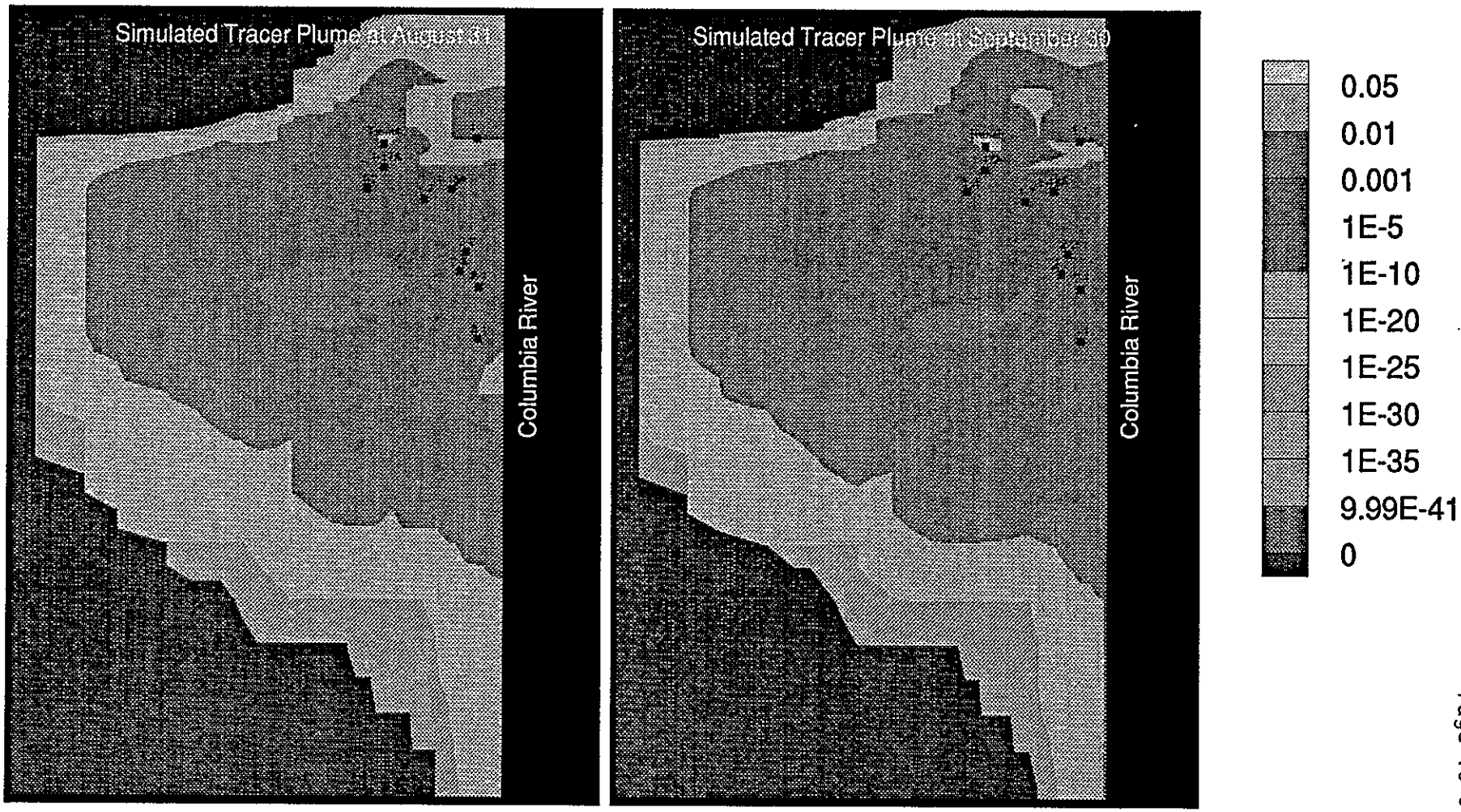
300-FF-5 OU: Porflo-3 Simulation of Tracer Test at the 316-5 Trench

Case I: Release at June 15 with Q = 560 kg/hr



300-FF-5 OU: Porflo-3 Simulation of Tracer Test at the 316-5 Trench

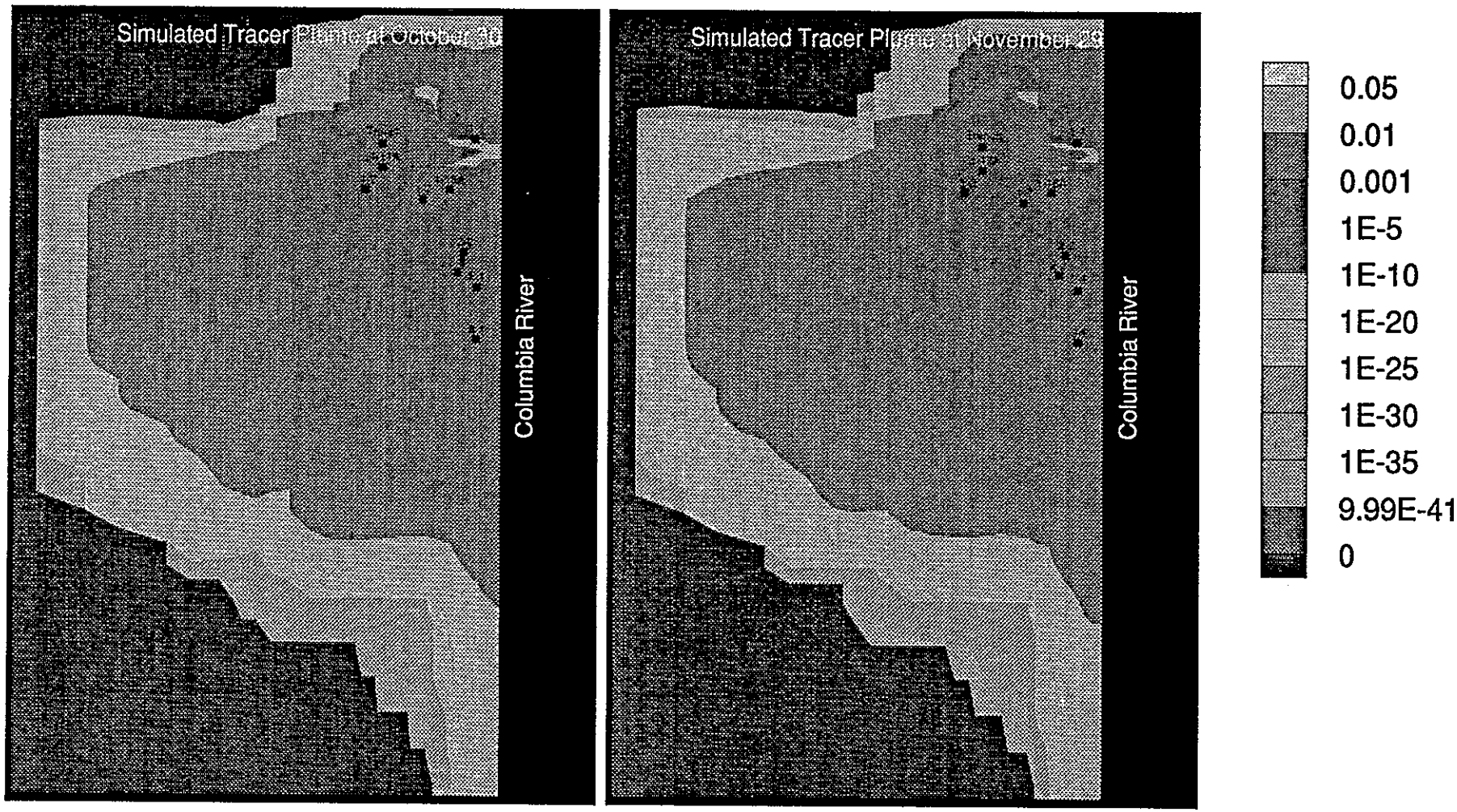
Case I: Release at June 15 with Q = 560 kg/hr



300-FF-5 OU: Porflo-3 Simulation of Tracer Test at the 316-5 Trench

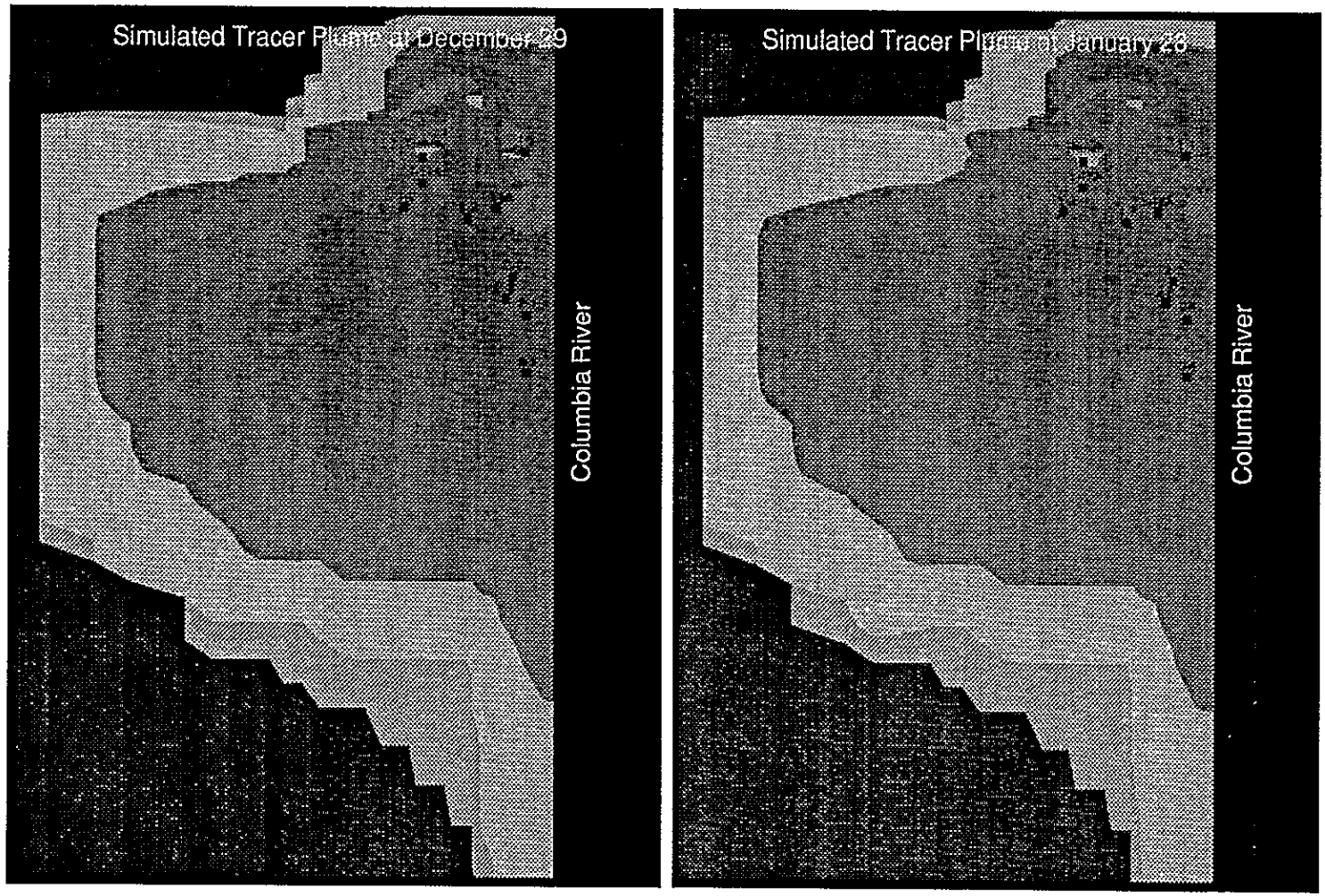
Case V: Release at October 1 with Q = 560 kg/hr

Background Plume from Spring Release



300-FF-5 OU: Porflo-3 Simulation of Tracer Test at the 316-5 Trench

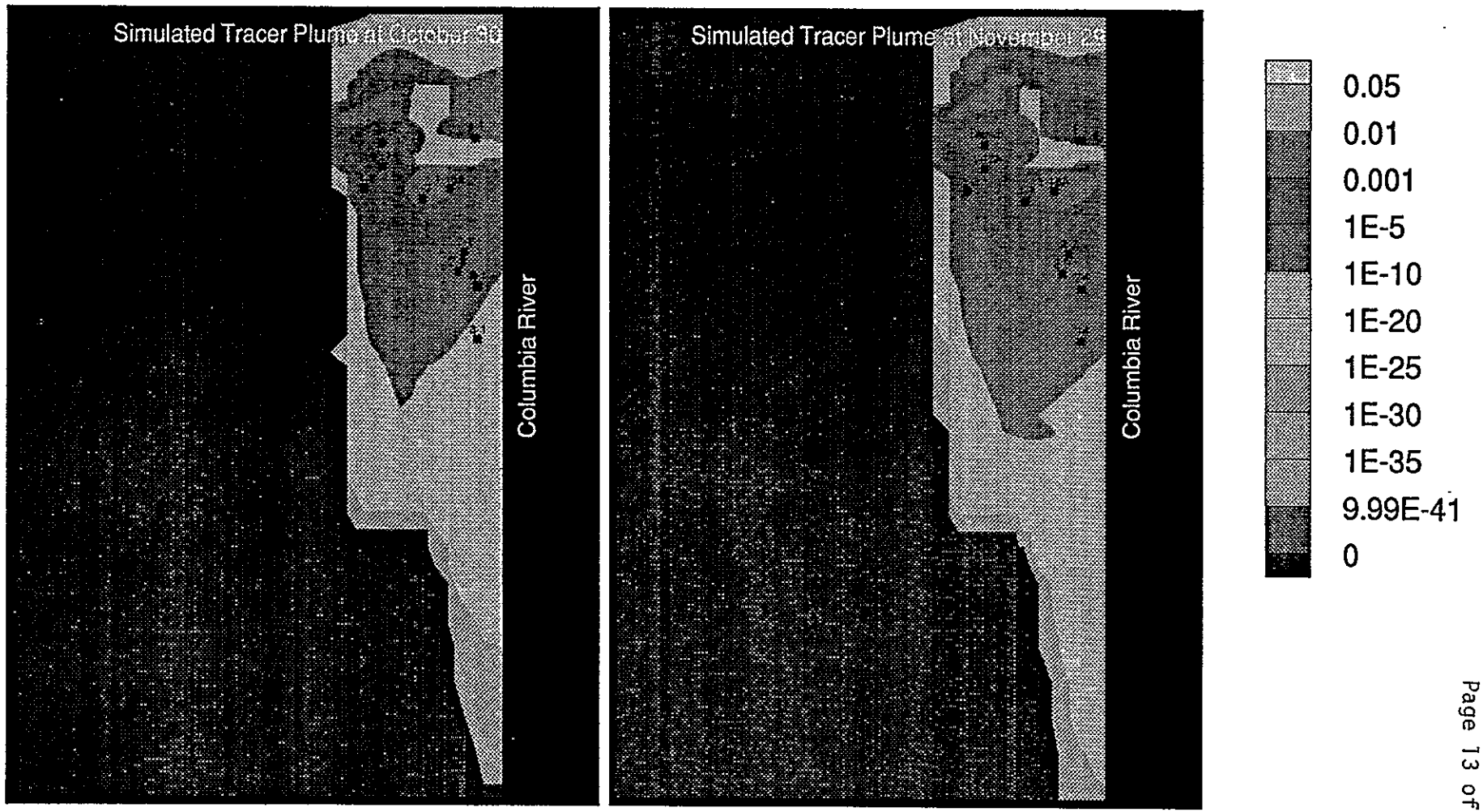
Case V: Release at October 1 with Q = 560 kg/hr
Combined Plume from Spring and Fall Releases



300-FF-5 OU: Porflo-3 Simulation of Tracer Test at the 316-5 Trench

Case V: Release at October 15 with Q = 560 kg/hr

No Background Concentration from Spring Release



TRACER TRAVEL TIMES FROM THE 316-5 PROCESS TRENCH TO SELECTED WELLS FOR FALL RELEASE

WELL #	TRAVEL TIME (DAYS) *	PEAK CONCENTRATION (kg/m^3)	ppb
1-1	112	1x10^-3	1000
1-17A	< 16	----------	> 3700
1-16A	39	4x10^-3	4000
3-1	-----	----------	< 1
1-7	27	2x10^-3	2000
2-3	80	3x10^-5	30
2-2	88	2x10^-4	200
2-1	-----	----------	< 5
1-2	16	3x10^-4	300

* Assuming 2 hr. travel time from trench to water table

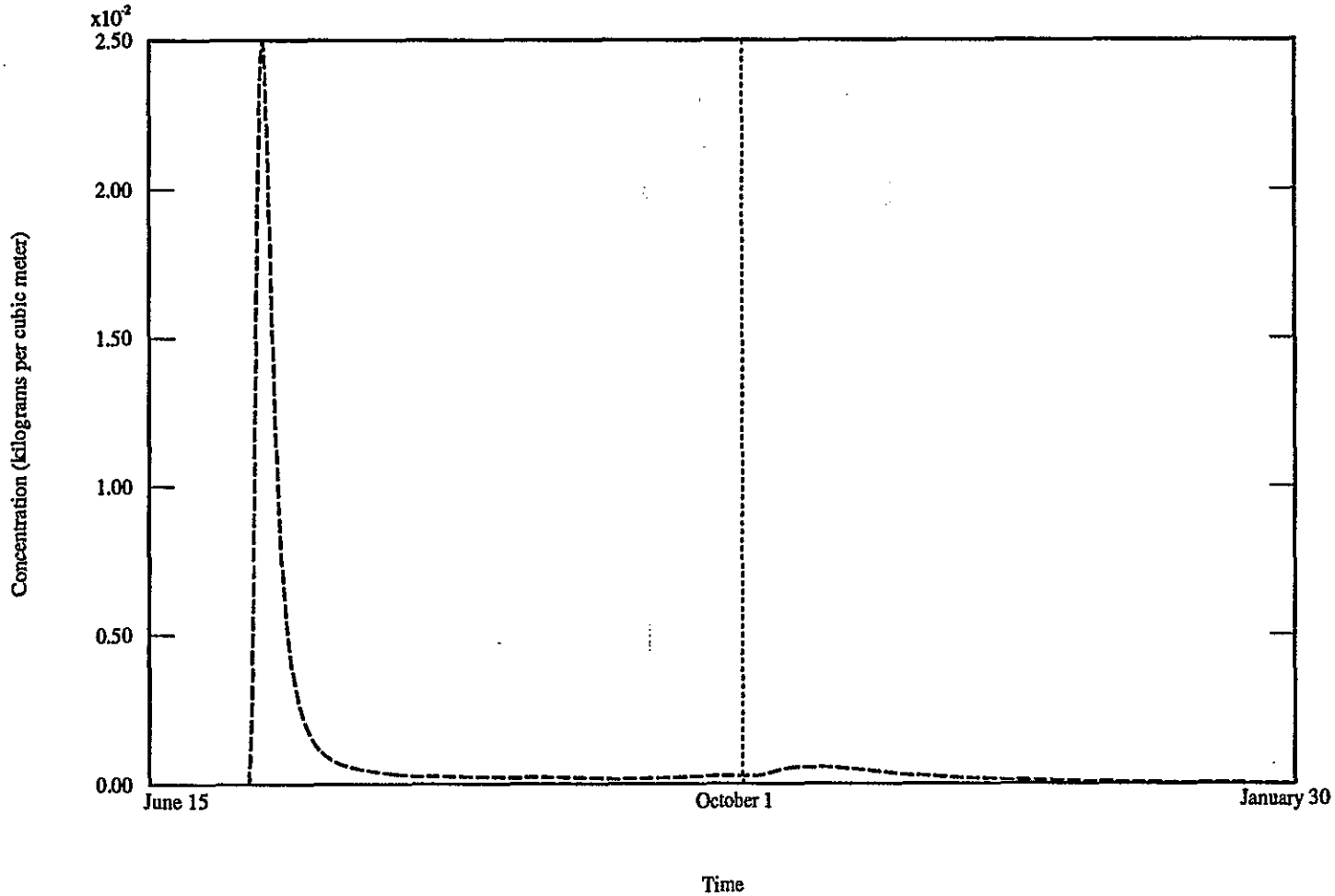
TRACER TRAVEL TIMES FROM THE 316-5 PROCESS TRENCH TO SELECTED WELLS FOR SPRING RELEASE

WELL #	TRAVEL TIME (DAYS) *	PEAK CONCENTRATION (kg/m^3)	ppb
1-1	------	----------	< 10
1-17A	< 4	----------	> 25,000
1-16A	------	----------	< 20
3-1	190	7x10^-4	700
1-7	> 227	----------	< 200
2-3	130	6x10^-4	600
2-2	181	6x10^-4	600
2-1	146	7x10^-4	700
1-2	4	2x10^-2	25,000

* Assuming 2 hr. travel time from trench to water table

Time History of Tracer Concentration at Well 1-2

Porflo-3 Simulation of Large Scale Tracer Test at the 316-5 Trench



Distribution

300-FF-5 Operable Unit Managers Meeting
January 23, 1992

Doug Fassett, SWEC (A4-35)
Ward Staubitz, USGS
Diane Clark, DOE-RL/SED (A5-55)

Tom Wintczak, WHC (L4-92)
Mel Adams, WHC (H4-55)

E.D. Goller, DOE (A5-19)

Donna Lacombe, PRC
Larry Hulstrom, WHC (H4-55)
Rich Carlson, WHC (H4-55)
Don Praast, GAO (A1-80)
Mike Thompson, DOE (A5-19)
L.D. Arnold, WHC (B2-35)

cc. Elizabeth A. Bracken (A5-19)
Director, DOE-RL, ERD
~~Steven H. Wisness (A6-95)~~
~~Proj. Mgr, Tri-Party Agrmnt.~~
DOE-RL/ERD
Roger D. Freeberg (A5-19)
Chief, Rstr. Br., DOE RL/ERD
Ronald E. Gerton (A4-02)
Director, DOE-RL, WMD
Richard D. Wojtasek (L4-92)
Prgm. Mgr. WHC
Mary Harmon, DOE-HQ (EM-442)

Administrative Record: 300-FF-5; care of Susan Wray, WHC (H4-22)

Please inform Doug Fassett (SWEC) of deletions or additions to the distribution list.